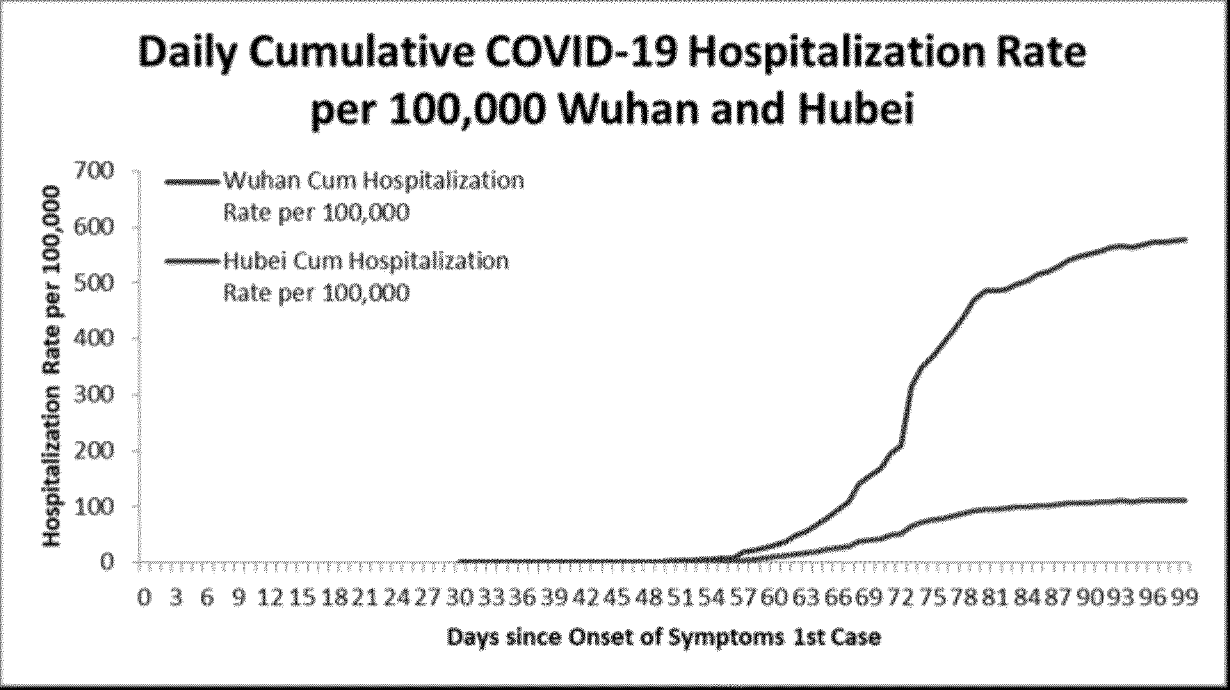
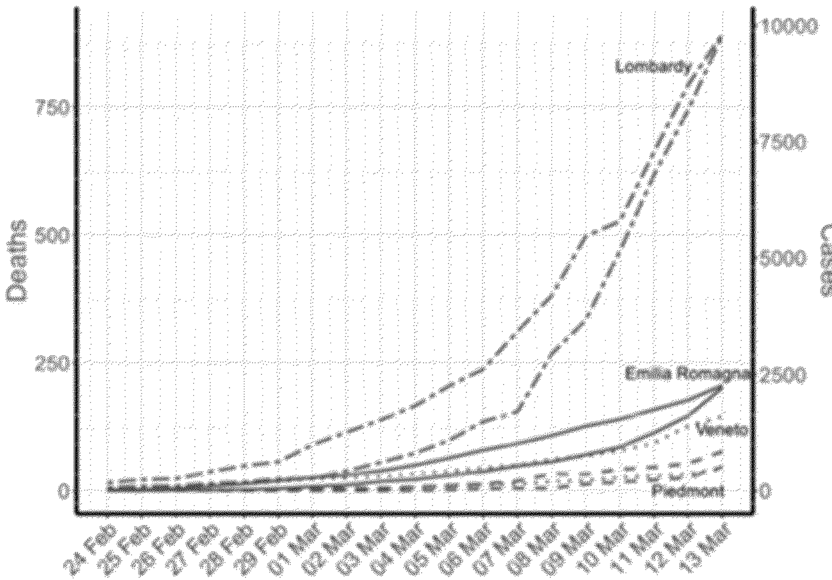

Daily Cumulative COVID-19 Hospitalization Rate per 100,000 Wuhan and Hubei
Wuhan Cum Hospitalization Rate per 100,000
Hubei Cum Hospitalization Rate per 100,000
Hospitalization Rate per 100,000
0
100
200
300
400
500
600
700
0 3 6 9 12 15 18 21 24 27 30 33 36 39 42 45 48 51 54 57 60 63 66 69 72 75 78 81 84 87 90 93 96 99
Days since Onset of Symptoms 1st Case



Deaths
Cases
0
250
500
750
2500
5000
7500
10000
Lombardy
Emilia Romagna
Veneto
Piedmont
24 Feb
25 Feb
26 Feb
27 Feb
28 Feb
29 Feb
01 Mar
02 Mar
03 Mar
04 Mar
05 Mar
06 Mar
07 Mar
08 Mar
09 Mar
10 Mar
11 Mar
12 Mar
13 Mar

To: Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Callahan, Michael V.,M.D.[mvcallahan@mgh.harvard.edu]
Cc: Dr. Eva Caneva, Duane[duane.caneva@hq.dhs.gov]; McDonald, Eric[eric.mcdonald@sdcounty.ca.gov]; Richard Rob Darling, MD[rdarling@patronusmedical.com]; William Lang[wlang@worldclinic.com]; Mecher, Carter[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[dhanfling@iqt.org]; Gruber,David (DSHS)[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[lborio@iqt.org]; Tracey McNamara[tmcnamara@westernu.edu]; Baric, Ralph S[rbaric@email.unc.edu]; Hunt, Richard (OS/ASPR/EMMO)[richard.hunt@hhs.gov]; WILKINSON, THOMAS[thomas.wilkinson@hq.dhs.gov]; David[dmarcozzi@som.umaryland.edu]; CharitytA@CDPH[charity.dean@cdph.ca.gov]; Gregory J[martingj@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen,tDanielt(OS/ASPR/SPPR)[daniel.dodgen@hhs.gov]; DeBord,Kristin (OS/ASPR/SPPR)[kristin.debord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[sally.phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[herbert.wolfe@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[robert.johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[gary.disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[john.redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[david.hassell@hhs.gov]; Hamel, Joseph (OS/ASPR/IO)[joseph.hamel@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[scott.lee@hhs.gov]; Larry G[padgetlg@state.gov]; Ryan Morhard[ryan.morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[jerome.adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Brian Dr. Eva K
From: Carter
Sent: Tue 3/17/2020 11:11:56 AM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March

Things have been unfolding much as many of you have predicted. We suspected that community transmission was well underway in the US, but could not confirm due to the delays in testing. That created an uneasiness about waiting too long to pull the trigger on the full array of NPIs (since it was nearly impossible to determine the presence or extent of community transmission). To circumvent this obstacle, we explored other triggers to assist cities in their decision making re implementing NPIs (first death in a community of a non-travel related case, first ICU confirmed case, etc.). But the early actions of a few bold Governors and state public health officials helped to get things rolling. The implementation of NPIs including school closure hit a tipping point and spread much faster than the virus and those triggers were OBE and became irrelevant. And yesterday POTUS pretty much announced TLC (community mitigation) in its original form that was described in the original guidance published in 2007. So Eva and others, I would breathe a sigh of relief in terms of what has unfolded over the past week or so.

I do not have a background in public health. Another lifetime ago I was an intensivist. The feeling I have now is exactly the same feeling I had when we moved the critically ill patient from the ER or the floor into the unit and now the patient is intubated and on a vent. The patient has been sedated and is quietly resting. All lines are in. BP is stabilized with fluids and pressors. There was a lot of frantic work to get to this point but now we are at a brief plateau. This is when I would sit down and think while writing a note to collect my thoughts. Critical care is really about paying attention to small details. It is really about making as few mistakes as possible because the sicker the patient, the less they can tolerate any misstep—they are extremely brittle with little reserve. The only way I knew how to do that was by reviewing system by system assessing the patient to really understand what is happening (diagnostic list), and refining a strategy or plan of attack (treatment plan), and preparing myself and the family for what is likely in store (prognosis).

That is exactly what we should be doing now. We are at brief plateau. I'm not going to even think about weaning and extubation right now (the equivalent of letting up on NPIs right now)—there is too much in between now and that future state. The tasks ahead are different . We need to be smart and focused like we were with NPIs. Time to go system by system and prioritize what is critically important and get moving. The patient needs continuous monitoring and constant attention going forward. We are going to need to be flexible and adaptable and pay attention to small details and learn from the patient. And make as few mistakes as possible.

Sent from Mail for Windows 10

From: Parker Jr, Gerald W

Sent: Tuesday, March 17, 2020 10:23 AM
To: Callahan, Michael V.,M.D.; Carter Mecher
Cc: Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Michael - well stated. Thanks

Get Outlook for iOS

From: Callahan, Michael V.,M.D. <mvcallahan@mgh.harvard.edu>
Sent: Tuesday, March 17, 2020 09:22
To: Carter Mecher
Cc: Dr. Eva Lee; Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

During ASPR briefings to a governora we briefed on ICS sops and asked “ do you want to be Singapore or Milan”

San Fran Mayor London Breed and Gov Newsom yelled “Singapore”

Mayor Durken let her Dir Public Health decide.

And here we are.

Let’s create more St Lus then Pittsburgs

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital
Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O’Neil Building 6th Floor

Washington, DC

On Mar 17, 2020, at 07:54, Carter Mecher wrote:

External Email - Use Caution

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.
<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.
<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 9:09 AM
To: Carter Mecher
Cc: 1974usna@gmail.com; Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -
https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.
https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:
Sent: Monday, March 16, 2020 11:58 PM
To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'
Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

---

From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Sent: Monday, March 16, 2020 10:54 PM
To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>;

Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar
Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson
MothersheadtJerry L. Brian Benson
Dr. Eva K Lee
Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>
<107167135F80426AA971E5292779B4ED.png>

To: Dr. Eva K
Cc: Brian Tracey McNamara[tmcNamara@westernu.edu]; Carter Dr. Eva Caneva, Duane[duane.caneva@hq.dhs.gov]; McDonald, Eric[Eric.McDonald@sdcounty.ca.gov]; Richard William Lang[wlang@worldclinic.com]; Mecher, Carter[Carter.Mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; Gruber,David (DSHS)[David.Gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; M.D.[MVCALLAHAN@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Gregory J[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen,tDanielt(OS/ASPR/SPPR)[daniel.dodgen@hhs.gov]; DeBord,Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis
From: Rob Darling, MD[rdarling@patronusmedical.com]
Sent: Tue 3/17/2020 1:21:53 PM (UTC-04:00)
Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:

Fax:
Mobile:

www.patronusmedical.com
rdarling@patronusmedical.com
www.LinkedIn.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

> We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.
>
> Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-

14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Tuesday, March 17, 2020 12:42 PM, Brian Benson wrote:

> Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?
>
> > On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:
>
> When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?
> What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.
> Tracey
>
> Get Outlook for Android

From: Dr. Eva Lee <eva.evalee.lee64@gmail.com>
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher
Cc: 1974usna@gmail.com Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_ Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade,

David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Brian Benson Dr. Eva K Lee <evalee-g

Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 9:09 AM
To: Carter Mecher
Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:
Sent: Monday, March 16, 2020 11:58 PM
To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'
Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

---

From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Sent: Monday, March 16, 2020 10:54 PM
To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson MothersheadtJerry L. <1974USNA@gmail.com>; Brian Benson Dr. Eva K Lee <evalee-

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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To: 'Carter 'Dr. Eva

Cc: 'Caneva, Duane'[duane.caneva@hq.dhs.gov]; 'McDonald, Eric'[Eric.McDonald@sdcounty.ca.gov]; 'Richard 'Rob Darling, MD'[rdarling@patronusmedical.com]; 'William Lang'[wlang@worldclinic.com]; 'Mecher, Carter'[Carter.Mecher@va.gov]; 'Tom 'Richard Hatchett'[richard.hatchett@cepi.net]; 'Lawler, James V'[james.lawler@unmc.edu]; 'Parker Jr, Gerald W'[gparker@cvm.tamu.edu]; 'Hanfling, Dan'[DHanfling@iqt.org]; 'Gruber,David (DSHS)'[David.Gruber@dshs.texas.gov]; 'CHRISTOPHER 'Borio, Luciana'[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; 'Hunt, Richard (OS/ASPR/EMMO)'[Richard.Hunt@hhs.gov]; 'WILKINSON, THOMAS'[THOMAS.WILKINSON@hq.dhs.gov]; 'M.D.'[MVCALLAHAN@mgh.harvard.edu]; 'David'[DMarcozzi@som.umaryland.edu]; 'CharitytA@CDPH'[Charity.Dean@cdph.ca.gov]; 'Gregory J'[MartinGJ@state.gov]; 'Walters, William (STATE.GOV)'[walterswa2@state.gov]; 'HAMILTON, CAMERON'[cameron.hamilton@hq.dhs.gov]; 'Dodgen,tDanielt(OS/ASPR/SPPR)'[daniel.dodgen@hhs.gov]; 'DeBord,Kristin (OS/ASPR/SPPR)'[Kristin.DeBord@hhs.gov]; 'Phillips, Sally (OS/ASPR/SPPR)'[Sally.Phillips@hhs.gov]; 'Matthew J CIV USARMY (USA)'[matthew.j.hepburn.civ@mail.mil]; 'Lisa Koonin'[lkoonin1('HARVEY, MELISSA'[melissa.harvey@hq.dhs.gov]; 'WOLFE, HERBERT'[HERBERT.WOLFE@hq.dhs.gov]; 'Eastman, Alexander'[alexander.eastman@hq.dhs.gov]; 'EVANS, MARIEFRED'[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; 'Johnson, Robert (OS/ASPR/BARDA)'[Robert.Johnson@hhs.gov]; 'Yeskey, Kevin'[kevin.yeskey@hhs.gov]; 'Disbrow, Gary (OS/ASPR/BARDA)'[Gary.Disbrow@hhs.gov]; 'Redd, John (OS/ASPR/SPPR)'[John.Redd@hhs.gov]; 'Hassell, David (Chris) (OS/ASPR/IO)'[David.Hassell@hhs.gov]; 'Hamel, Joseph (OS/ASPR/IO)'[Joseph.Hamel@hhs.gov]; 'Wade, David'[david.wade@hq.dhs.gov]; 'TARANTINO, DAVID A'[david.a.tarantino@cbp.dhs.gov]; 'KAUSHIK, SANGEETA'[sangeeta.kaushik@hq.dhs.gov]; 'Lee, Scott (OS/ASPR/EMMO)'[Scott.Lee@hhs.gov]; 'Larry G'[PadgetLG@state.gov]; 'Ryan Morhard'[Ryan.Morhard@weforum.org]; 'Steven Jt(tCHFStDPH)'[steven.stack@ky.gov]; 'Adams, Jerome (HHS/OASH)'[Jerome.Adams@hhs.gov]; 'Mansoura, Monique K.'[mmansoura@mitre.org]; 'Fantinato, Jessica (USDA.GOV)'[jessica.fantinato@usda.gov]; 'DC'[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; 'Cordts, Jerome (CTR)'[jerome.cordts@associates.hq.dhs.gov]; 'Schnitzer, Jay J.'[jschnitzer@mitre.org]; 'Ignacio, Joselito'[joselito.ignacio@fema.dhs.gov]; 'Will Gaskins'[will.gaskins@efiia.com]; 'Kevin Montgomery'[kevin@collaborate.org]; 'Logan, Linda L'[llogan@cvm.tamu.edu]; 'Venkayya, Rajeev'[rajeev.venkayya@takeda.com]; 'Ronny 'Brian 'Dr. Eva K

From: Tracey McNamara[tmcNamara@westernu.edu]
Sent: Tue 3/17/2020 1:38:31 PM (UTC-04:00)
Subject: Re: Red Dawn Responding, Start 16 March

Thanks Jerry - Has this been discussed as an option with military and public health leaders? Who can take the lead on this and get it moving?
Tracey

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From:
Sent: Tuesday, March 17, 2020 10:25:14 AM
To: Tracey McNamara <tmcNamara@westernu.edu>; 'Carter Mecher' 'Dr. Eva Lee'

Cc: 'Caneva, Duane' <duane.caneva@hq.dhs.gov>; 'McDonald, Eric' <Eric.McDonald@sdcounty.ca.gov>; 'Richard Tubb' 'Rob Darling, MD' <rdarling@patronusmedical.com>; 'William Lang' <wlang@worldclinic.com>; 'Mecher, Carter' <Carter.Mecher@va.gov>; 'Tom Bossert' 'Richard Hatchett' <richard.hatchett@cepi.net>; 'Lawler, James V' <james.lawler@unmc.edu>; 'Parker Jr, Gerald W' <gparker@cvm.tamu.edu>; 'Hanfling, Dan' <DHanfling@iqt.org>; 'Gruber,David (DSHS)' <David.Gruber@dshs.texas.gov>; 'CHRISTOPHER ALLEN' 'Borio, Luciana' <LBorio@iqt.org>; 'Baric, Ralph S' <rbaric@email.unc.edu>; 'Hunt, Richard (OS/ASPR/EMMO)' <Richard.Hunt@hhs.gov>; 'WILKINSON, THOMAS' <THOMAS.WILKINSON@hq.dhs.gov>; 'M.D.' <MVCALLAHAN@mgh.harvard.edu>; 'David' <DMarcozzi@som.umaryland.edu>; 'CharitytA@CDPH' <Charity.Dean@cdph.ca.gov>; 'Gregory J' <MartinGJ@state.gov>; 'Walters, William (STATE.GOV)' <walterswa2@state.gov>; 'HAMILTON, CAMERON' <cameron.hamilton@hq.dhs.gov>; 'Dodgen,tDanielt(OS/ASPR/SPPR)' <daniel.dodgen@hhs.gov>; 'DeBord,Kristin (OS/ASPR/SPPR)' <Kristin.DeBord@hhs.gov>; 'Phillips, Sally (OS/ASPR/SPPR)' <Sally.Phillips@hhs.gov>; 'Matthew J CIV USARMY (USA)' <matthew.j.hepburn.civ@mail.mil>; 'Lisa Koonin' 'HARVEY, MELISSA' <melissa.harvey@hq.dhs.gov>; 'WOLFE, HERBERT' <HERBERT.WOLFE@hq.dhs.gov>; 'Eastman, Alexander' <alexander.eastman@hq.dhs.gov>; 'EVANS, MARIEFRED' <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; 'Johnson, Robert (OS/ASPR/BARDA)' <Robert.Johnson@hhs.gov>; 'Yeskey, Kevin' <kevin.yeskey@hhs.gov>; 'Disbrow, Gary (OS/ASPR/BARDA)' <Gary.Disbrow@hhs.gov>; 'Redd, John (OS/ASPR/SPPR)' <John.Redd@hhs.gov>; 'Hassell, David (Chris) (OS/ASPR/IO)' <David.Hassell@hhs.gov>; 'Hamel, Joseph (OS/ASPR/IO)' <Joseph.Hamel@hhs.gov>; 'Wade, David' <david.wade@hq.dhs.gov>; 'TARANTINO, DAVID A' <david.a.tarantino@cbp.dhs.gov>; 'KAUSHIK, SANGEETA' <sangeeta.kaushik@hq.dhs.gov>; 'Lee, Scott (OS/ASPR/EMMO)' <Scott.Lee@hhs.gov>; 'Larry G' <PadgetLG@state.gov>; 'Ryan Morhard' <Ryan.Morhard@weforum.org>; 'Steven Jt(tCHFStDPH)'

<steven.stack@ky.gov>; 'Adams, Jerome (HHS/OASH)' <Jerome.Adams@hhs.gov>; 'Mansoura, Monique K.' <mmansoura@mitre.org>; 'Fantinato, Jessica (USDA.GOV)' <jessica.fantinato@usda.gov>; 'DC' <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; 'Cordts, Jerome (CTR)' <jerome.cordts@associates.hq.dhs.gov>; 'Schnitzer, Jay J.' <jschnitzer@mitre.org>; 'Ignacio, Joselito' <joselito.ignacio@fema.dhs.gov>; 'Will Gaskins' <will.gaskins@efiia.com>; 'Kevin Montgomery' <kevin@collaborate.org>; 'Logan, Linda L' <llogan@cvm.tamu.edu>; 'LLogandakar'
'Venkayya, Rajeev' <rajeev.venkayya@takeda.com>; 'Ronny Jackson' 'Brian Benson'
'Dr. Eva K Lee'
Subject: RE: Red Dawn Responding, Start 16 March

Tracey

You just can't gut the military hospitals. There are over 10M Tricare beneficiaries, including the active duty, and a substantial portion of those receive care in military hospitals. We gutted the military hospitals for Desert Storm, but then we mobilized all the reservists to back fill into the military system, so it was a zero sum game, other than to play a shell game as to where those resources were used. And, if this burns in several metropolitan areas at once, where to you send the troops?

There are a number (I do not know the number, but someone does) of fleet hospitals and CASHs (Army hospitals), and the USAF has their EMED system. When PK Carlton was the USAF SG, he mobilized a couple of EMED units to Houston in response to Tropical Storm Allison, back around 2001 I think.

One thing that the services COULD do, easily enough, is to provide their Table of Allowances for these various military medical systems. That would get you at least a starting point for necessary makeshift hospitals. I also have (I am a packrat) the files from the Acute Care Centers concept that was developed by the Biological Warfare Improved Response Program (BWIRP) back in the early 2000s, it has rudimentary personnel and equipment requirements, even shows how to set up oxygen systems.

Jerry

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 12:33 PM
To: Carter Mecher Dr. Eva Lee
Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Brian Benson Dr. Eva K Lee <evalee-

Subject: Re: Red Dawn Responding, Start 16 March

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?
What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.
Tracey

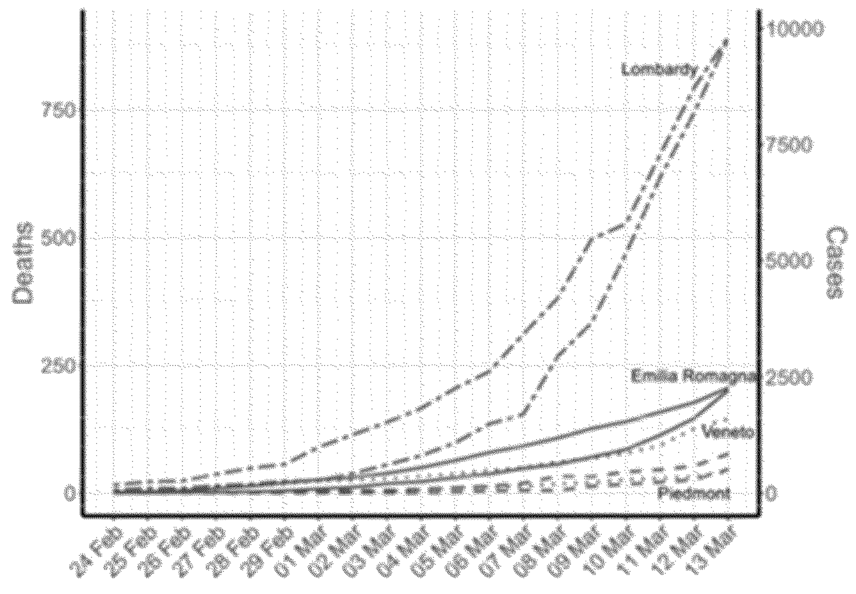
Get Outlook for Android

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher
Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@g HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Brian Benson Dr. Eva K Lee <evalee-g
Subject: Re: Red Dawn Responding, Start 16 March

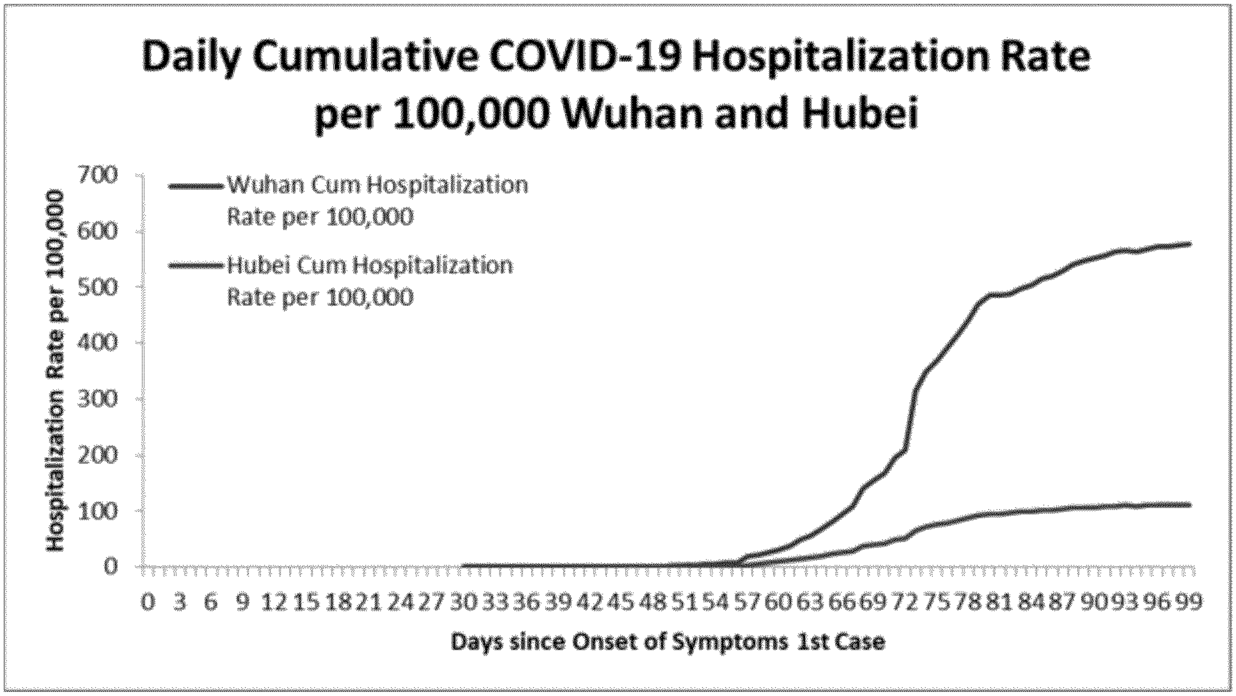
Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

> Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.
>
> Interesting to look at the regional variation in Italy.



It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.



It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 9:09 AM
To: Carter Mecher
Cc: 1974usna@gmail.com; Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom

Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:
Sent: Monday, March 16, 2020 11:58 PM
To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee';

'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'
Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

---

From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Sent: Monday, March 16, 2020 10:54 PM
To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson MothersheadtJerry L. Brian Benson Dr. Eva K Lee
Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

To: 'Caneva, Duane'[duane.caneva@hq.dhs.gov]; 'McDonald, Eric'[Eric.McDonald@sdcounty.ca.gov]; 'Carter Mecher'| 'Richard Tubb'['Rob Darling, MD'[rdarling@patronusmedical.com]; 'William Lang'[wlang@worldclinic.com]; 'Mecher, Carter'[Carter.Mecher@va.gov]; 'Tom Bossert'| 'Richard Hatchett'[richard.hatchett@cepi.net]; 'Lawler, James V'[james.lawler@unmc.edu]; 'Parker Jr, Gerald W'[gparker@cvm.tamu.edu]; 'Hanfling, Dan'[DHanfling@iqt.org]; 'Gruber,David (DSHS)'[David.Gruber@dshs.texas.gov]; 'Dr. Eva Lee'['CHRISTOPHER ALLEN' jamison.day 'Borio, Luciana'[LBorio@iqt.org]; 'Tracey McNamara'[tmcNamara@westernu.edu]; Baric, Ralph S[rbaric@email.unc.edu]; 'Hunt, Richard (OS/ASPR/EMMO)'[Richard.Hunt@hhs.gov]; 'WILKINSON, THOMAS'[THOMAS.WILKINSON@hq.dhs.gov]; 'M.D.'[MVCALLAHAN@mgh.harvard.edu]; 'David'[DMarcozzi@som.umaryland.edu]; 'CharitytA@CDPH'[Charity.Dean@cdph.ca.gov]; 'Gregory J'[MartinGJ@state.gov]; 'Walters, William (STATE.GOV)'[walterswa2@state.gov]; 'HAMILTON, CAMERON'[cameron.hamilton@hq.dhs.gov]; 'Dodgen,tDanielt(OS/ASPR/SPPR)'[daniel.dodgen@hhs.gov]; 'DeBord,Kristin (OS/ASPR/SPPR)'[Kristin.DeBord@hhs.gov]; 'Phillips, Sally (OS/ASPR/SPPR)'[Sally.Phillips@hhs.gov]; 'Matthew J CIV USARMY (USA)'[matthew.j.hepburn.civ@mail.mil]; 'Lisa Koonin'[| 'HARVEY, MELISSA'[melissa.harvey@hq.dhs.gov]; 'WOLFE, HERBERT'[HERBERT.WOLFE@hq.dhs.gov]; 'Eastman, Alexander'[alexander.eastman@hq.dhs.gov]; 'EVANS, MARIEFRED'[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; 'Johnson, Robert (OS/ASPR/BARDA)'[Robert.Johnson@hhs.gov]; 'Yeskey, Kevin'[kevin.yeskey@hhs.gov]; 'Disbrow, Gary (OS/ASPR/BARDA)'[Gary.Disbrow@hhs.gov]; 'Redd, John (OS/ASPR/SPPR)'[John.Redd@hhs.gov]; 'Hassell, David (Chris) (OS/ASPR/IO)'[David.Hassell@hhs.gov]; 'Hamel, Joseph (OS/ASPR/IO)'[Joseph.Hamel@hhs.gov]; 'Wade, David'[david.wade@hq.dhs.gov]; 'TARANTINO, DAVID A'[david.a.tarantino@cbp.dhs.gov]; 'KAUSHIK, SANGEETA'[sangeeta.kaushik@hq.dhs.gov]; 'Lee, Scott (OS/ASPR/EMMO)'[Scott.Lee@hhs.gov]; 'Larry G'[PadgetLG@state.gov]; 'Ryan Morhard'[Ryan.Morhard@weforum.org]; 'Steven Jt(tCHFStDPH)'[steven.stack@ky.gov]; 'Adams, Jerome (HHS/OASH)'[Jerome.Adams@hhs.gov]; 'Mansoura, Monique K.'[mmansoura@mitre.org]; 'Fantinato, Jessica (USDA.GOV)'[jessica.fantinato@usda.gov]; 'DC'[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; 'Cordts, Jerome (CTR)'[jerome.cordts@associates.hq.dhs.gov]; 'Schnitzer, Jay J.'[jschnitzer@mitre.org]; 'Ignacio, Joselito'[joselito.ignacio@fema.dhs.gov]; 'Will Gaskins'[will.gaskins@efiia.com]; 'Kevin Montgomery'[kevin@collaborate.org]; 'Logan, Linda L'[llogan@cvm.tamu.edu]; 'LLogandakar 'Venkayya, Rajeev'[rajeev.venkayya@takeda.com]; 'Ronny Jackson'| 'Brian Benson' 'Dr. Eva K Lee
From: 1974usna(
Sent: Tue 3/17/2020 1:42:23 PM (UTC-04:00)
Subject: Social Distancing
joc70085_644_654.pdf
Medium- Coronavirus.pdf

Apparently, my attachments sent last night with my comments on Markel's analysis of 1918 social distancing, etc. did not come through, so I am going to try again.

Nonpharmaceutical Interventions Implemented by US Cities During the 1918-1919 Influenza Pandemic

Howard Markel, MD, PhD
Harvey B. Lipman, PhD
J. Alexander Navarro, PhD
Alexandra Sloan, AB
Joseph R. Michalsen, BS
Alexandra Minna Stern, PhD
Martin S. Cetron, MD

Context A critical question in pandemic influenza planning is the role nonpharmaceutical interventions might play in delaying the temporal effects of a pandemic, reducing the overall and peak attack rate, and reducing the number of cumulative deaths. Such measures could potentially provide valuable time for pandemic-strain vaccine and antiviral medication production and distribution. Optimally, appropriate implementation of nonpharmaceutical interventions would decrease the burden on health care services and critical infrastructure.

Objectives To examine the implementation of nonpharmaceutical interventions for epidemic mitigation in 43 cities in the continental United States from September 8, 1918, through February 22, 1919, and to determine whether city-to-city variation in mortality was associated with the timing, duration, and combination of nonpharmaceutical interventions; altered population susceptibility associated with prior pandemic waves; age and sex distribution; and population size and density.

Design and Setting Historical archival research, and statistical and epidemiological analyses. Nonpharmaceutical interventions were grouped into 3 major categories: school closure; cancellation of public gatherings; and isolation and quarantine.

Main Outcome Measures Weekly excess death rate (EDR); time from the activation of nonpharmaceutical interventions to the first peak EDR; the first peak weekly EDR; and cumulative EDR during the entire 24-week study period.

Results There were 115 340 excess pneumonia and influenza deaths (EDR, 500/100 000 population) in the 43 cities during the 24 weeks analyzed. Every city adopted at least 1 of the 3 major categories of nonpharmaceutical interventions. School closure and public gathering bans activated concurrently represented the most common combination implemented in 34 cities (79%); this combination had a median duration of 4 weeks (range, 1-10 weeks) and was significantly associated with reductions in weekly EDR. The cities that implemented nonpharmaceutical interventions earlier had greater delays in reaching peak mortality (Spearman r=-0.74, P .001), lower peak mortality rates (Spearman r=0.31, P=.02), and lower total mortality (Spearman r=0.37, P=.008). There was a statistically significant association between increased duration of nonpharmaceutical interventions and a reduced total mortality burden (Spearman r=-0.39, P=.005).

Conclusions These findings demonstrate a strong association between early, sustained, and layered application of nonpharmaceutical interventions and mitigating the consequences of the 1918-1919 influenza pandemic in the United States. In planning for future severe influenza pandemics, nonpharmaceutical interventions should be considered for inclusion as companion measures to developing effective vaccines and medications for prophylaxis and treatment.

JAMA. 2007;298(6):644-654 www.jama.com

THE INFLUENZA PANDEMIC OF 1918-1919 was the most deadly contagious calamity in human history. Approximately 40 million individuals died worldwide, including 550 000 individuals in the United States.[1-4] The historical record demonstrates that when faced with a devastating pandemic, many nations, communities, and individuals adopt what they perceive to be effective social distancing measures or nonpharmaceutical interventions including isolation of those who are ill, quarantine of those suspected of having contact with those who are ill, school and selected business closure, and public gathering cancellations.[5,6] One compelling question emerges: can lessons from the 1918-1919 pandemic be applied to contemporary pandemic planning efforts to maximize public health benefit while minimizing the disruptive social consequences of the pandemic as well as those accompanying public health response measures?[7-10]

Most pandemic influenza policy makers agree that even the most rigorous nonpharmaceutical interventions are unlikely either to prevent a pandemic or change a population's underlying biological susceptibility to the pandemic virus. However, a growing

Author Affiliations: Center for the History of Medicine, University of Michigan Medical School, Ann Arbor (Drs Markel, Navarro, and Stern, and Ms Sloan and Mr Michalsen); and Division of Global Migration and Quarantine, Centers for Disease Control and Prevention, Atlanta, Georgia (Drs Lipman and Cetron).
Corresponding Author: Martin S. Cetron, MD, Division of Global Migration and Quarantine, Centers for Disease Control and Prevention, 1600 Clifton Rd, Mailstop E-03, Atlanta, GA 30333 (mcetron@cdc.gov).

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body of theoretical modeling research suggests that nonpharmaceutical interventions might play a salubrious role in delaying the temporal effect of a pandemic; reducing the overall and peak attack rate; and reducing the number of cumulative deaths.[11-15] Such measures could potentially provide valuable time for production and distribution of pandemic-strain vaccine and antiviral medication. Optimally, appropriate implementation of nonpharmaceutical interventions would decrease the burden on health care services and critical infrastructure.

The historical record of the 1918-1919 influenza pandemic in the United States constitutes one of the largest recorded experiences with the use of nonpharmaceutical interventions to mitigate an easily spread, high mortality and morbidity influenza virus strain (ie, a category 4-5 pandemic using the Centers for Disease Control and Prevention February 2007 *Interim Pre-Pandemic Planning Guidance*).[16] Our study focused on this data set by assessing the nonpharmaceutical interventions implemented in 43 cities in the continental United States from September 8, 1918, through February 22, 1919, a period that encompasses all of the second pandemic wave (September-December 1918) and the first 2 months of the third wave (January-April 1919) and represents the principal time span of activation and deactivation of nonpharmaceutical interventions. The purpose was to determine whether city-to-city variation in mortality was associated with the timing, duration, and combination (or layering) of nonpharmaceutical interventions; altered population susceptibility associated with prior pandemic waves; age and sex distribution; and population size and density.

METHODS

Data Collection

We combined systematic historical data collection and contemporary epidemiological and statistical analytic tools. Mortality data were obtained from the US Census Bureau's *Weekly Health Index*[17] for 1918-1919, a series of reports listing total deaths and death rates for 43 large US cities. These 43 cities were among the 66 most populous urban centers according to the 1920 census, and all had a population greater than 100 000. Of the 66 most populous cities, the remaining 23 had incomplete archival and mortality records. No city with a comprehensive archival record of nonpharmaceutical interventions was excluded. The *Weekly Health Index* is the most complete extant compilation of weekly pneumonia and influenza mortality data in US urban areas during the 1918-1919 pandemic.

In addition, we captured all of the available public health documents on nonpharmaceutical interventions implemented by these 43 cities during the 1918-1919 pandemic, including municipal public health department annual and monthly reports and weekly bulletins; every state and federal report on the 1918-1919 influenza pandemic published between 1917 and 1922; US Census pneumonia and influenza mortality data from 1910-1920; the corpus of published historical, medical, and public health literature on the 1918-1919 pandemic; 86 different newspapers from the 43 different cities; records of US military installations between 1917-1920; and additional holdings housed in several major libraries and archival repositories (the complete bibliography of the 1144 primary and secondary sources is available as an online supplement at http://www.cdc.gov/ncidod/dq/index.htm).[17-23]

Data Analysis

From the census reports, we extracted the weekly pneumonia and influenza mortality data covering the 24 weeks from September 8, 1918, through February 22, 1919, for the 43 US cities. In 1920, these 43 cities had a combined population of approximately 23 million (22% of the total US population). A small number of missing values (846 [0.6%] of 136 563 deaths) was imputed. Using estimated weekly baseline pneumonia and influenza death rates generated from the 1910-1916 median monthly values found by Collins et al,[18] weekly excess death rates (EDR) were computed. Based on available mortality data and epidemiological reports from that era, as well as a recent retrospective statistical analysis, we estimated that those who succumbed to influenza contracted it 10 days earlier.[3,24-27]

The onset of the epidemic in a particular city was estimated as either the day of the first reported pneumonia and influenza case, or the calendar day of the first recorded pneumonia and influenza death minus 10 days, whichever was earlier. Information on nonpharmaceutical interventions was captured by reviewing at least 2 daily, high-circulation newspapers for each city and available municipal or state health reports. Nonpharmaceutical interventions were grouped into 3 major categories: school closure; public gathering bans; and isolation and quarantine. We also considered an additional general category of ancillary nonpharmaceutical interventions (eg, altering work schedules, limited closure or regulations of businesses, transportation restrictions, public risk communications, face mask ordinances).

Nonpharmaceutical interventions were considered either activated ("on") or deactivated ("off"), according to data culled from the historical record and daily newspaper accounts. Specifically, these nonpharmaceutical interventions were legally enforced and affected large segments of the city's population. Isolation of ill persons and quarantine of those suspected of having contact with ill persons refers only to mandatory orders as opposed to voluntary quarantines being discussed in our present era. School closure was considered activated when the city officials closed public schools (grade school through high school); in most, but not all cases, private and parochial schools followed suit. Public gathering bans typically meant the closure of saloons, public entertainment venues, sporting events, and indoor gatherings were banned or moved outdoors; outdoor gatherings were not always canceled during this period (eg, Liberty bond parades); there were no recorded bans on shopping in grocery and drug stores. Based on an estimated 10-day time frame between disease onset and death,

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we estimated that the association of nonpharmaceutical interventions with reductions in EDR occurred 10 days after their actual date of implementation.[3,24-27]

To test the association of the layering and timing of nonpharmaceutical interventions with mortality, an analysis of variance (ANOVA) model was constructed with weekly EDR as the dependent variable and epidemiological week, city, and the status (on/off) of every combination of nonpharmaceutical interventions as the independent variables. In the ANOVA model, each possible combination of nonpharmaceutical interventions was treated as an independent variable to test for layering effects. Any factor with a *P* value of less than .10 was included in the model. Because there is ambiguity over the rigor with which the category of ancillary nonpharmaceutical interventions was applied, enforced, and deactivated, we focused primarily on the 3 major categories of nonpharmaceutical interventions discussed above and we included the ancillary nonpharmaceutical interventions in the multivariate model for purposes of completeness.

We defined additional outcome (dependent) variables: (1) the time to first peak as the time in days from the activation of the first major category of nonpharmaceutical interventions to the date of the first peak EDR; (2) the magnitude of the first peak as the first peak weekly EDR; and (3) the mortality burden as the cumulative EDR during the entire 24-week study period.

We also defined the following independent variables. The first was the public health response time (PHRT) as the time in days (either positive or negative) between the date when weekly EDR first exceeds twice the baseline pneumonia and influenza death rate (2 baseline; ie, when the mortality rate begins to accelerate) and the activation of the first major nonpharmaceutical interventions. Interventions that occurred prior to this reference point are recorded as negative PHRT values, indicating that public health officials responded to events prior to the acceleration of weekly death rates. However, most cities had positive PHRT in that they reacted after the 2 baseline mortality threshold, indicating that the epidemic had already entered its acceleration phase. The second independent variable was total days of nonpharmaceutical interventions, which was defined as the total cumulative number of days that nonpharmaceutical interventions from the 3 major categories were activated during the entire 24-week study period.

The ANOVA models were based on the study design of a 43 (city) 24 (week) factorial design without replication. Because there is no replication, the city week interaction term was treated as the error term in the multivariate analysis. We considered 4 different nonpharmaceutical interventions. Hence, there are 15 different combinations of these interventions (excluding the no intervention combination). Each of these 15 combinations was either implemented (on) or not implemented (off) in each city for each week. Thus, the effects of each of these combinations of nonpharmaceutical interventions are included in the city week interaction term. Each of these terms (along with their city and week interaction terms) were extracted from the original city week interaction term. The remaining unexplained variation was used as the error term in the ANOVA model. The remaining error term is likely to be larger than a true error term generated through replication so the analysis of any effects using this error term can be expected to be conservative. Such a factorial model without replication can be used to test hypotheses but the lack of natural error in the model makes estimates or predictions from the model such as effect size measures and confidence intervals nonestimable.

We also generated scatterplots and Spearman rank correlation coefficients to explore the associations between PHRT and each of the 2 additional dependent variables and associations between total days of nonpharmaceutical interventions and mortality burden. We further investigated these associations by using box plots and Wilcoxon rank sum tests to compare the outcomes for the cities above and below the median of each independent variable.

We also generated scatterplots and Spearman rank correlation coefficients to explore other potential or confounding associations (as independent determinants): (1) EDR in the 4 successive waves of the pandemic; (2) city-specific population size vs EDR; (3) city-specific population density vs EDR; (4) city-specific population age distribution vs EDR; and (5) city-specific sex distribution vs EDR. Analyses were performed using SAS statistical software version 9.1 (SAS Institute Inc, Cary, NC).

RESULTS

There were 115 340 excess pneumonia and influenza deaths (EDR, 500/100 000 population) in the 43 cities during the 24 weeks analyzed. TABLE 1 shows considerable city-to-city variation in mortality profiles and intervention characteristics; lists the earliest reported dates of the first pneumonia and influenza cases by city, mortality acceleration (2 baseline EDR), first implementation of nonpharmaceutical interventions, and first peak EDR; and lists the values for each of the independent and outcome variables described above.

TABLE 2 shows the categories of nonpharmaceutical intervention combinations, the number of cities implementing those combinations, and the median and range of duration of implementation by each of the 43 cities during the study period. Every city adopted at least 1 of the 3 major categories of nonpharmaceutical interventions; 15 applied all 3 categories of nonpharmaceutical interventions concurrently. School closure concurrently combined with public gathering bans represented the most common combination, implemented in 34 cities (79%) for a median duration of 4 weeks (range, 1-10 weeks). School closure was ultimately used in some combination with the other categories of nonpharmaceutical interventions by 40 cities (93%). Three cities never officially closed their schools (New York City, New York, New Haven, Connecticut, and Chicago, Illinois, although the latter reported a student absenteeism

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rate of 45% at the peak of its epidemic); 25 cities closed their schools once, 14 closed them twice, and 1 (Kansas City, Missouri) closed its schools 3 times. Schools were officially closed a median of 6 weeks (range, 0-15 weeks).

The ANOVA multivariate model had an r^2 of 86.7% (P .001). Nonpharmaceutical interventions were a significant

Table 1. Characteristics of Influenza Pandemic for 43 US Cities Between September 8, 1918, and February 22, 1919

City	First Case Date	Mortality Acceleration Date[a]	Date of First Nonpharmaceutical Intervention	Public Health Response Time, d[b]	Total No. of Days of Nonpharmaceutical Interventions	Date of Peak Excess Death Rate	Time to Peak, d	Magnitude of First Peak, Excess Deaths/100 000 Population[c]	Excess Pneumonia and Influenza Mortality, Deaths/100 000 Population[d]
Albany, NY	9/27	10/6	10/9	3	47	10/24	15	161.8	553.2
Baltimore, MD	9/18	9/29	10/9	10	43	10/18	9	182.1	559.3
Birmingham, AL	9/24	9/30	10/9	9	48	10/22	13	70.9	591.8
Boston, MA	9/4	9/12	9/25	13	50	10/3	8	159.9	710.0
Buffalo, NY	9/24	9/28	10/10	12	49	10/22	12	140.9	529.5
Cambridge, MA	9/4	9/11	9/25	14	49	10/3	8	125.5	541.0
Chicago, IL	9/17	9/28	9/26	-2	68	10/21	25	84.8	373.2
Cincinnati, OH	9/24	10/4	10/6	2	123	10/24	18	67.6	451.2
Cleveland, OH	9/20	10/7	10/5	-2	99	10/31	26	83.6	474.0
Columbus, OH	9/20	10/6	10/11	5	147	10/24	13	47.3	311.7
Dayton, OH	9/20	10/5	9/30	-5	156	10/20	20	87.8	410.0
Denver, CO	9/17	9/27	10/6	9	151	10/20	14	55.0	630.9
Fall River, MA	9/9	9/16	9/26	10	60	10/12	16	165.2	621.3
Grand Rapids, MI	9/23	10/2	10/19	17	62	10/25	6	15.0	210.5
Indianapolis, IN	9/22	9/30	10/7	7	82	10/18	11	38.8	290.0
Kansas City, MO	9/20	9/26	9/26	0	170	10/27	31	58.1	579.8
Los Angeles, CA	9/27	10/6	10/11	5	154	10/30	19	64.2	493.8
Louisville, KY	9/13	10/1	10/7	6	145	10/20	13	74.8	406.4
Lowell, MA	9/9	9/16	9/27	11	59	10/10	13	123.1	522.9
Milwaukee, WI	9/14	10/6	10/11	5	132	10/23	12	36.4	291.5
Minneapolis, MN	9/21	10/6	10/12	6	116	10/24	18	37.6	267.1
Nashville, TN	9/21	10/6	10/7	1	55	10/16	9	160.1	610.4
New Haven, CT	9/14	9/23	10/15	22	39	10/24	9	109.5	586.5
New Orleans, LA	9/10	10/1	10/8	7	78	10/20	12	172.9	734.0
New York City, NY	9/5	9/29	9/18	-11	73	10/23	35	90.1	452.3
Newark, NJ	9/6	9/30	10/10	10	33	10/22	12	101.5	533.0
Oakland, CA	10/1	10/8	10/12	4	127	10/30	18	107.0	506.2
Omaha, NE	9/18	10/4	10/5	1	140	10/18	13	81.7	554.0
Philadelphia, PA	8/27	9/25	10/3	8	51	10/16	13	249.7	748.4
Pittsburgh, PA	9/4	9/27	10/4	7	53	11/5	32	130.7	806.8
Portland, OR	10/2	10/7	10/11	4	162	11/2	22	59.4	505.2
Providence, RI	9/8	9/17	10/6	19	42	10/17	11	105.2	574.2
Richmond, VA	9/21	9/29	10/6	7	60	10/16	10	112.2	508.3
Rochester, NY	9/22	10/6	10/9	3	54	10/26	17	70.2	359.1
St Louis, MO	9/23	10/7	10/8	1	143	10/29	21	30.0	358.0
St Paul, MN	9/21	10/2	11/6	35	28	11/12	6	55.6	413.2
San Francisco, CA	9/24	10/7	10/18	11	67	10/29	11	143.0	672.7
Seattle, WA	9/24	10/1	10/6	5	168	10/23	17	49.5	414.1
Spokane, WA	9/28	10/9	10/10	1	164	11/5	26	66.0	481.8
Syracuse, NY	9/12	9/18	10/7	19	39	10/14	7	145.4	541.4
Toledo, OH	9/21	10/13	10/15	2	102	10/25	10	54.8	294.5
Washington, DC	9/11	9/23	10/3	10	64	10/15	12	140.1	607.6
Worcester, MA	9/9	9/12	9/27	15	44	10/7	10	126.1	654.7

[a] Defined as 2 baseline death rate.
[b] Defined as days between 2 baseline death rate and first nonpharmaceutical intervention.
[c] Weekly excess death rate.
[d] Total excess death rate through 24 weeks.

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Table 2. Nonpharmaceutical Interventions Implemented in 43 US Cities Between September 8, 1918, and February 22, 1919

Type of Nonpharmaceutical Intervention	No. (%) of Cities Implementing Nonpharmaceutical Intervention for 1 wk (N = 43)[a]	Median (Range) Duration of Nonpharmaceutical Intervention, wk
Isolation or quarantine only	15 (35)	1 (1-10)
School closure only	22 (51)	1 (1-7)
Public gathering ban only	6 (14)	1.5 (1-5)
Isolation and quarantine and school closure	2 (5)	5.5 (4-7)
Isolation and quarantine and public gathering ban	4 (9)	4 (2-5)
School closure and public gathering ban	34 (79)	4 (1-10)
Isolation and quarantine, school closure, and public gathering ban	15 (35)	4 (2-6)

[a] Cities often implemented more than 1 nonpharmaceutical intervention combination during the outbreak period, so the total adds to more than 100%. The number of categories of nonpharmaceutical interventions implemented during some part of the outbreak was 1 in 1 city, 2 in 23 cities, and 3 in 19 cities. The total number of weeks that at least 1 nonpharmaceutical intervention was implemented was 4 in 6 cities, 5 in 6 cities, 6 in 8 cities, 7 in 3 cities, 8 in 6 cities, 10 in 5 cities, 11 in 4 cities, 13 in 1 city, 14 in 2 cities, 15 in 1 city, and 16 in 1 city. No cities had at least 1 nonpharmaceutical intervention implemented for durations of 9 and 12 weeks.

source of the variation in the weekly EDRs within and between the cities. The ANOVA results are shown in TABLE 3. The multivariate model demonstrates that layered nonpharmaceutical interventions generally had a more significant association with weekly EDR than individual nonpharmaceutical interventions. Specifically, combinations of nonpharmaceutical interventions including school closure and public gathering bans appeared to have the most significant association with weekly EDR (ie, the lowest *P* values, most were *P* .001). The large number of significant nonpharmaceutical interventions week interactions in the model confirms that the timing of the implementation of a given combination of nonpharmaceutical interventions was a significant factor in reducing mortality. One caveat is persistent nonpharmaceutical interventions city interactions, meaning that the success of a strategy of nonpharmaceutical interventions in a particular city does not uniformly translate to all other cities. The 2 outlier cities in our study, Grand Rapids, Michigan, and St Paul, Minnesota, exemplify this point.

The scatterplots in FIGURE 1A, Figure 1B, and Figure 1C display the associations between the PHRT and each of the 3 dependent variables. Figure 1A displays the association between PHRT in days and time to first peak EDR; cities that implemented nonpharmaceutical interventions earlier had greater delays in reaching peak mortality (Spearman r=-0.74, *P* .001). Figure 1B shows the association between PHRT and the magnitude of the first peak EDR; cities that implemented nonpharmaceutical interventions earlier had lower peak mortality rates (Spearman r=0.31, *P*=.02). Figure 1C depicts the association between PHRT and total mortality burden; cities that implemented nonpharmaceutical interventions earlier experienced a lower total mortality (Spearman r=0.37, *P*=.008). In summary, when comparing the 21 cities with earlier (less than the median) PHRT with the 21 cities with the later (greater than the median) PHRT, there are statistically significant differences for each of the outcome measures (*P* .001; TABLE 4).

Figures 1C and 1D show the association between early, sustained, and layered application of nonpharmaceutical interventions and total excess pneumonia and influenza mortality burden in 43 cities. Figure 1C shows the statistically significant association between PHRT and total mortality burden. Figure 1D shows a statistically significant association between increased duration of nonpharmaceutical interventions and a reduced total mortality burden (Spearman r=-0.39, *P*=.005). In summary, the 21 cities that had earlier PHRT (ie, less than the median) and the most sustained and most days of nonpharmaceutical interventions had a statistically significant reduction in excess pneumonia and influenza mortality rates compared with the 21 cities that had later PHRT and fewer days of nonpharmaceutical interventions (Table 4).

FIGURE 2 shows the aggregate city mortality curves by region (East, Midwest and South, and West). FIGURE 3 displays 4 city-specific mortality curves, including weekly EDR and the nonpharmaceutical interventions implemented as well as their activation and deactivation dates for St Louis, Missouri, New York City, Denver, Colorado, and Pittsburgh, Pennsylvania. These 4 cities were chosen because they indicate the broad spectrum of outcomes seen in the 43 cities studied as well as for their geographical and social diversity. (The mortality curves for all 43 cities are available at http://www.cdc.gov/ncidod/dq/index.htm.) Overall, cities that implemented nonpharmaceutical interventions earlier experienced associated delays in the time to peak mortality, reductions in the magnitude of the peak mortality, and decreases in the total mortality burden.

In exploring alternative and potentially confounding explanations for variation in city-specific EDR, we used a scatterplot to compare the cumulative EDR of the 43 cities during pandemic waves 1 (February-May 1918), 2 (September-December 1918), 3 (January-April 1919), and 4 (January-April 1920).[2,3] We found no statistically significant association of the EDR across the 43 cities when comparing successive waves. Specifically, the severity or occurrence of wave 1 is not associated, either positively or negatively, with the severity of wave 2; the severity of wave 2 is not associated with the severity of wave 3; and the severity of wave 3 is not associated with the severity of wave 4 (figures appear in the online supplement at http://www.cdc.gov/ncidod/dq/index.htm).[28,29]

Published virological evidence for strain variation during wave 2 is limited to a single genotypic variant without evidence for significant phenotypic change in virulence.[30-33] While plausible, no virologi-

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cal evidence yet exists to explain the perplexing mortality difference between the spring 1918 wave, which was reportedly milder, and the subsequent fall and winter waves. Additional studies may clarify the understanding of the 1918 pandemic's wave phenomena.

Similarly, scatterplots comparing the cumulative EDR to the city-specific population size and density; sex distribution; and proportion of ages of younger than 1 month to 5 years, 15 to 40 years, and older than 65 years, which corresponded to high reported specific mortality rates in 1918 demonstrated no association. Among the 43 cities we investigated, neither the city's population size, density, sex distribution, nor age distribution accounted for the differences in mortality (figures appear in supplement at http://www.cdc.gov/ncidod/dq/index.htm).

Table 3. Multivariate Model Showing Effect of Combinations of Nonpharmaceutical Interventions on Weekly Excess Death Rates for 43 US Cities Between September 8, 1918, and February 22, 1919[a]

Source of Variation	*df*	Sum of Squares	Mean Square	*F* Score	*P* Value
Type of confounders					
Week	29	75 677.0	2609.6	16.24	.001
City	42	65 557.9	1560.9	9.72	.001
1 Nonpharmaceutical intervention					
School closure	1	1288.7	1288.7	8.02	.005
Week	8	4551.8	569.0	3.54	.001
Banning public gatherings	1	1342.0	1342.0	8.35	.004
Isolation and quarantine	1	911.1	911.1	5.67	.02
City	10	3976.5	397.7	2.48	.006
Ancillary nonpharmaceutical interventions	1	897.3	897.3	5.59	.02
Week	13	6122.4	471.0	2.93	.001
City	12	10 257.6	854.8	5.32	.001
2 Nonpharmaceutical interventions					
School closure and banning public gatherings	1	681.3	681.3	4.24	.04
Week	9	6497.0	721.9	4.49	.001
City	13	6229.9	479.2	2.98	.001
School closure and isolation and quarantine	1	2335.3	2335.3	14.54	.001
Week	4	2434.2	608.6	3.79	.005
Banning public gatherings and isolation and quarantine	1	292.3	292.3	1.82	.18
Week	1	563.9	563.9	3.51	.06
Banning public gatherings and ancillary nonpharmaceutical interventions	1	272.6	272.6	1.70	.19
Week	4	7444.6	1861.1	11.59	.001
City	4	5547.6	1386.9	8.63	.001
Isolation and quarantine and ancillary nonpharmaceutical interventions	1	48.1	48.1	0.30	.58
Week	2	1507.6	753.8	4.69	.009
City	2	824.7	412.4	2.57	.08
3 Nonpharmaceutical interventions					
School closure, banning public gatherings, and isolation and quarantine	1	762.4	762.4	4.75	.03
Week	2	2239.3	1119.7	6.97	.001
School closure, banning public gatherings, and ancillary nonpharmaceutical interventions	1	691.6	691.6	4.41	.04
Week	10	12 260.5	1226.0	7.63	.001
City	26	51 423.8	1977.8	12.31	.001
School closure, isolation and quarantine, and ancillary nonpharmaceutical interventions	1	3451.1	3451.1	21.48	.001
Week	4	2493.5	623.4	3.88	.004
Banning public gatherings, isolation and quarantine, and ancillary nonpharmaceutical interventions	1	51.9	51.9	0.32	.57
Week	8	4535.2	566.9	3.53	.001
4 Nonpharmaceutical interventions					
School closure, banning public gatherings, isolation and quarantine, and ancillary nonpharmaceutical interventions	1	503.7	503.7	3.14	.08
Week	9	6068.3	674.3	4.20	.001
City	13	23 509.7	1808.4	11.26	.001
Error	770	123 691.2	160.6		

[a] r^2 = 86.7%

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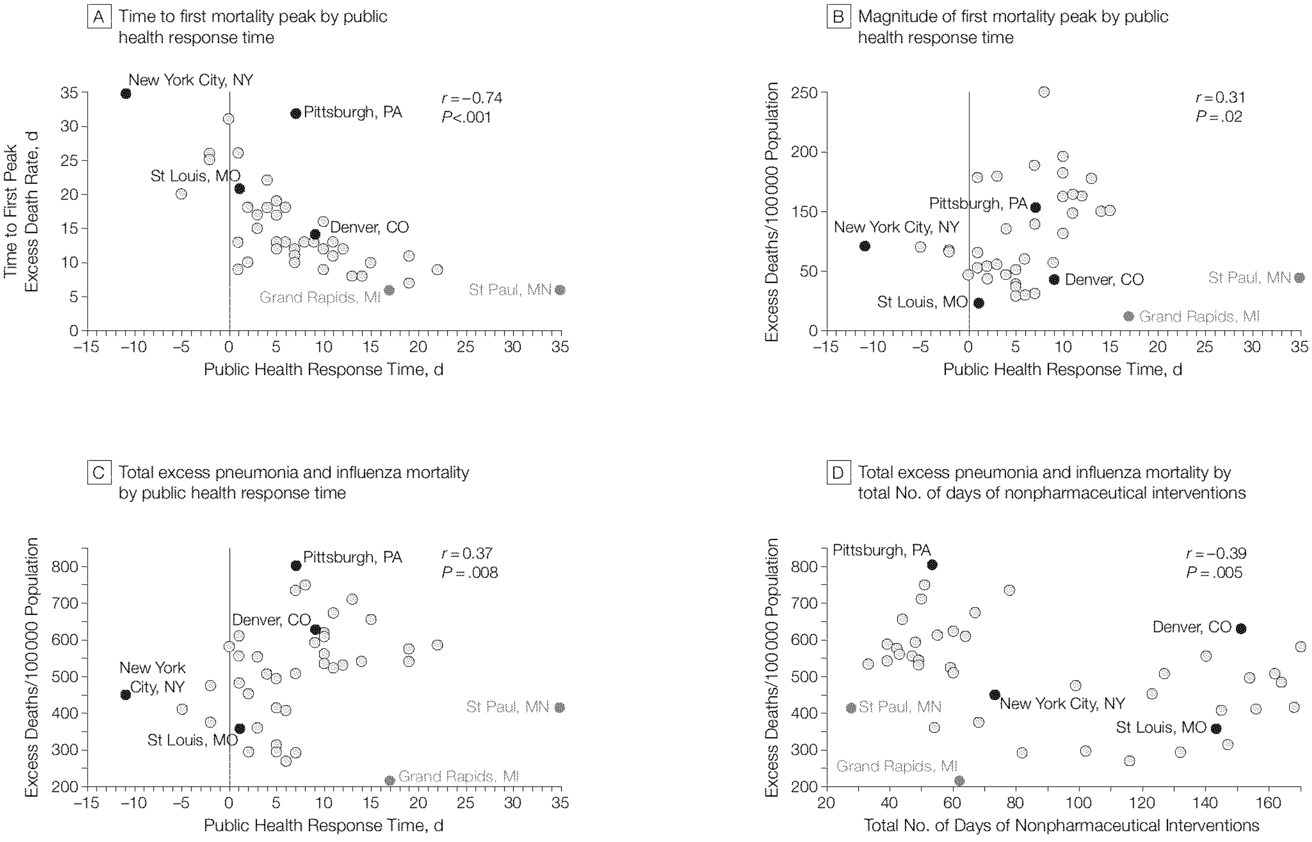
COMMENT

During the 1918-1919 influenza pandemic, all 43 cities eventually implemented nonpharmaceutical interventions but the time of activation, duration, and choice or combination of these nonpharmaceutical interventions appear to have been key factors in their success or failure. In 1918, decisions to activate nonpharmaceutical interventions were typically triggered by excess morbidity, mortality, or both, as well as situational awareness of other communities near and far. Because discerning precisely the first arrival of pandemic virus in a community was difficult, we chose to measure public health response time in reference to excess pneumonia and influenza mortality (ie, when weekly EDR first crossed the threshold of 2 the baseline and the mortality rates entered an acceleration phase).

Figure 1. Scatterplot of Public Health Response Time for 43 US Cities From September 8, 1918, Through February 22, 1919



The 4 cities represented by black circles are discussed further in the text. The 2 cities represented by blue circles are outliers chosen to demonstrate that the associations shown are not perfect. The Spearman rank correlation coefficient was used.

Table 4. Implementation Strategy of Nonpharmaceutical Interventions for 21 Cities Between September 8, 1918, and February 22, 1919

	Public Health Response Time, d						
	Early (7 d)			Late (7 d)			
Outcome Variable	25th Percentile	50th Percentile	75th Percentile	25th Percentile	50th Percentile	75th Percentile	*P* Value
Time to peak, d	13	18	22	9	11	13	.001
Magnitude of first peak (weekly EDR)	54.7	67.6	84.8	101.5	125.8	145.4	.001
Excess pneumonia and influenza mortality rate (total EDR)	359.1	451.2	505.2	529.5	580.3	654.7	.001
	Total Days of Nonpharmaceutical Interventions						
	Most (65 d)			Least (65 d)			
Excess pneumonia and influenza mortality rate (total EDR)	358.0	451.2	505.2	529.5	559.3	610.4	.001

Abbreviation: EDR, excess death rate.

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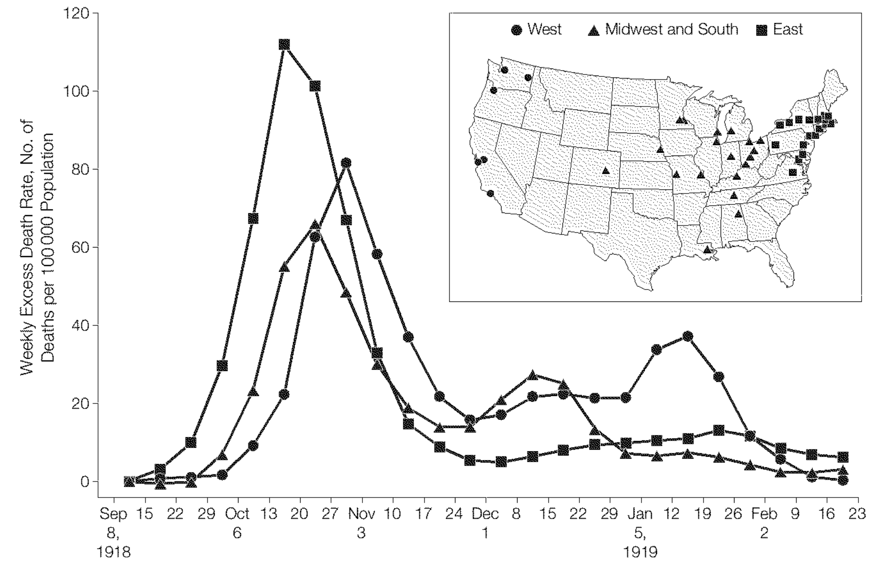
Hence, the difference in time between the first nonpharmaceutical interventions and this excess mortality threshold may be a positive or negative value. For example, in Philadelphia, Pennsylvania, which was affected early and was unprepared to respond, the PHRT was 8 and the EDR was approximately 37/100 000 population at the point of implementing nonpharmaceutical interventions; in contrast, New York City's PHRT was -11 days and the EDR was 0/100 000 population at the point of implementing nonpharmaceutical interventions. New York City responded to its first influenza cases and the perceived severity of the epidemic in nearby cities without waiting for excess deaths to accumulate.

The US Centers for Disease Control and Prevention's newly released interim community mitigation guidance recommends activating nonpharmaceutical interventions when outbreaks due to a pandemic virus strain first are confirmed in a state or metropolitan service region.[16] Several theoretical models suggest that the effect of targeted, layered strategies for nonpharmaceutical interventions may be optimized when community influenza attack rates are 1% or lower.[11-15] Given the exponential growth of an unmitigated influenza pandemic, it is reasonable to expect that the timing of interventions will be among the most critical factors. Such expectations and biological realities are consistent with our observations of the 1918 pandemic, when rapid public health response time was a critical factor in the successful application of nonpharmaceutical interventions.

Late interventions, regardless of their duration or permutation of use, almost always were associated with worse outcomes. However, timing alone was not consistently associated with success. The combination and choice of nonpharmaceutical interventions also appeared to be critical as confirmed by the multivariate model.

For example, New York City reacted earliest to the gathering influenza crisis, primarily with the sustained (10 weeks beginning September 19, 1918) and rigidly enforced application of compulsory isolation and quarantine procedures, along with an enforced staggered business hour ordinance from October 5 through November 3, 1918.[34] During this era, New York City's health department was renowned internationally for its innovative policies of mandatory case reporting and rigidly enforced isolation and quarantine procedures.[35] Typically, individuals diagnosed with influenza were isolated in hospitals or makeshift facilities, while those suspected to have contact with an ill person (but who were not yet ill themselves) were quarantined in their homes with an official placard declaring that location to be under quarantine. New York City mounted an early and sustained response to the epidemic and experienced the lowest death rate on the Eastern seaboard but it did not layer its response. New York City's cumulative mortality burden, 452/100 000, ranked 15 out of the 43 cities studied.

Figure 2. Aggregate Weekly Excess Death Rates for 43 US Cities by Region From September 8, 1918, Through February 22, 1919



The total excess death rate is 555 for the East region; 413 for the Midwest and South region; and 529 for the West region.

In contrast, Pittsburgh, under orders from the Pennsylvania health department, executed a public gathering ban on October 4, 1918, but city officials delayed until October 24 before implementing school closure. A week later, on November 2, the state rescinded public gathering bans. The city applied its nonpharmaceutical interventions late and individually rather than combined. Pittsburgh's cumulative excess mortality burden (EDR=807/100 000) ranked 43 out of 43 cities during the study period.

However, the benefits of these interventions were not equally distributed. Those cities acting in a timely and comprehensive manner appear to have benefited most in terms of reductions in total EDR. For example, St Louis, which implemented a relatively early, layered strategy (school closure and cancellation of public gatherings), and sustained these nonpharmaceutical interventions for about 10 weeks each, did not experience nearly as deleterious an outbreak as 36 other communities in the study (cumulative EDR=358/100 000 population).

The 1918 experience suggests that sustained nonpharmaceutical interventions are beneficial and need to be "on" throughout the particular peak of a local experience. Many of the 43 cities in the study, particularly in the Midwest and South and West, experienced 2 peaks of excess pneumonia and influenza mortality (eg, Birmingham, Alabama, Cincinnati, Ohio, Columbus, Ohio, Denver, Indianapolis, Indiana, Kansas City,

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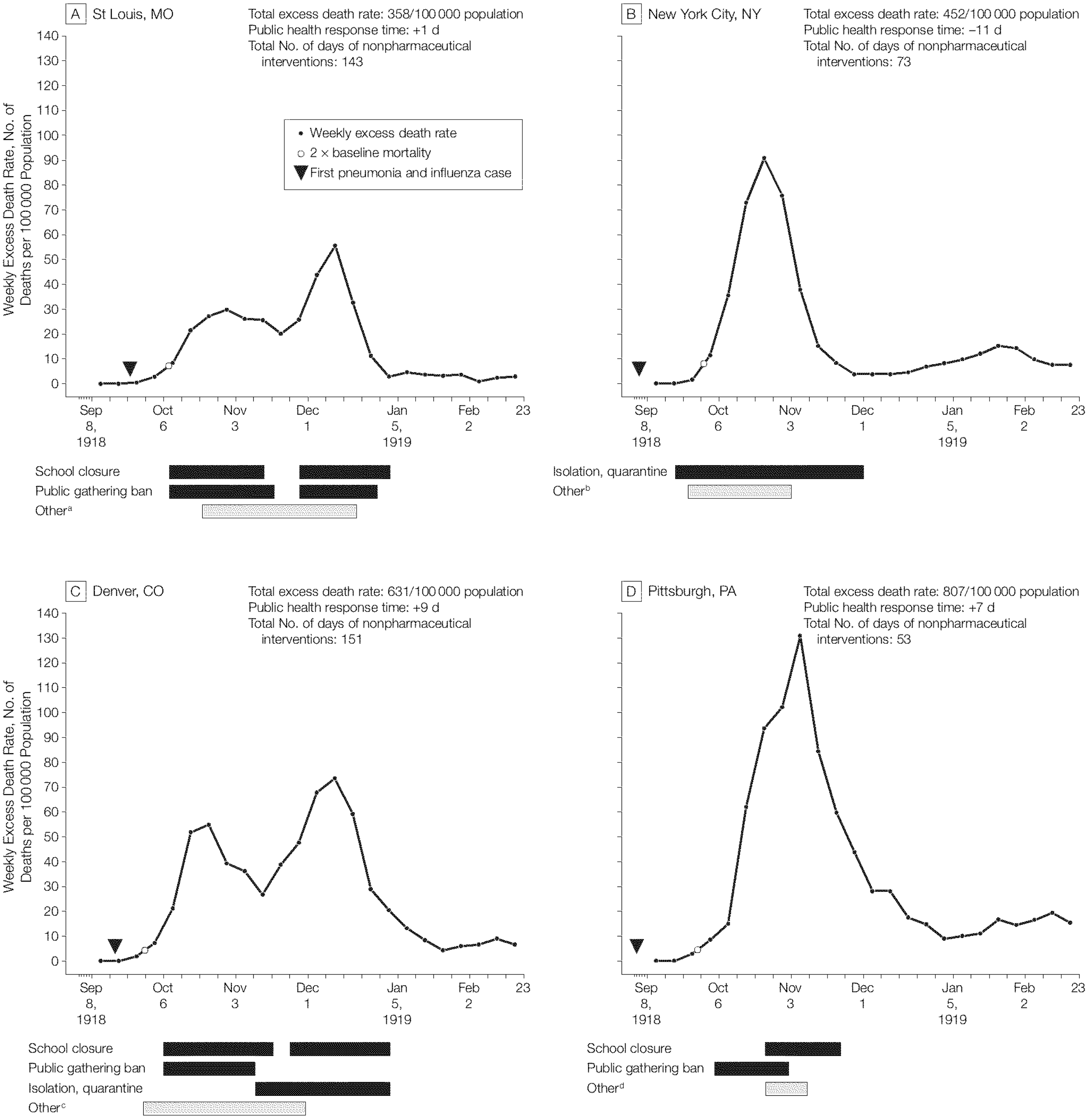
Louisville, Kentucky, Milwaukee, Wisconsin, Minneapolis, Minnesota, Oakland, California, Omaha, Nebraska, Portland, Oregon, Rochester, New York, St Louis, San Francisco, California, Seattle, Washington, Spokane, Washington, Toledo, Ohio; see figures in online supplement at http://www.cdc.gov/ncidod/dq/index.htm). These second

Figure 3. Weekly Excess Death Rates From September 8, 1918, Through February 22, 1919



Type and duration of nonpharmaceutical interventions are indicated under each plot. For the specific nonpharmaceutical interventions, black bars indicate activation.
[a] Business hours restricted, streetcars' capacity limited.
[b] Staggered business hours, signs with "cover coughs."
[c] Staggered business hours, warning signs posted in theaters.
[d] Schoolchildren given information to take home, warned not to gather in groups.

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peaks frequently followed the sequential activation, deactivation, and reactivation of nonpharmaceutical interventions, highlighting the transient protective nature of nonpharmaceutical interventions and the need for a sustained response. For example, Denver (cumulative EDR=631/100 000 population) responded twice with an extensive menu of nonpharmaceutical interventions that included public gathering bans, school closure, isolation and quarantine, and several ancillary nonpharmaceutical interventions and these actions are reflected temporally in its 2-peak mortality curve.

Such dual-peaked cities are of particular interest because of the specificity and temporal associations between excess mortality and the triggers of activation and deactivation of nonpharmaceutical interventions and the implications for a causal relationship. Among the 43 cities, we found no example of a city that had a second peak of influenza while the first set of nonpharmaceutical interventions were still in effect, suggesting that each city with a bimodal pattern served as its own control. In dual-peaked cities, activation of nonpharmaceutical interventions was followed by a diminution of deaths and, typically, when nonpharmaceutical interventions were deactivated, death rates increased.

History is not a predictive science. There exist numerous well-documented and vast differences between US society and public health during the 1918 pandemic compared with the present. We acknowledge the inherent difficulties of interpreting data recorded nearly 90 years ago and contending with the gaps, omissions, and errors that may be included in the extant historical record. The associations observed are not perfect; for example, 2 outlier cities (Grand Rapids and St Paul) experienced better outcomes with less than perfect public health responses. Future work by our research team will explore social, political, and ecological determinants, which may further help to explain some of this variation.

The United States of 1918 had many similar features to the present era: rapid transportation in the form of trains and automobiles; rapid means of communication in the form of the telegraph and telephone; large, heterogeneous populations with substantial urban concentrations (although a much higher percentage of the US population lived in rural areas compared with the present); a news system that was able to circulate information widely during the epidemic, including many daily newspapers and broadsheets distributed in communities; and a wide spectrum of public health agencies at various levels of government.

When examining the 1918 pandemic, however, it is important to recognize the numerous social, cultural, and scientific differences that do exist between that period and the present. For example, the legal understanding of privacy, civil, and constitutional rights as they relate to public health and governmentally directed measures (such as mass vaccination programs) has changed markedly over the past 9 decades. In addition, public support of and trust in these measures, along with trust in the medical profession as a whole, has shifted over time. Finally, other features of the modern era that need to be considered when applying lessons from history to the present era include the increased speed and mode of travel, above all high-volume commercial aviation; instantaneous access to information via the Internet and personal computers; a baseline understanding among the general population that the etiologic agents of infectious diseases are microbial; and advances in medical technology and therapeutics that have expanded considerably the options available for dealing with a pandemic.

Historical contextual issues and statistical limitations aside, the US urban experience with nonpharmaceutical interventions during the 1918-1919 pandemic constitutes one of the largest data sets of its kind ever assembled in the modern, postgerm theory era.

Our findings conform to 8 of A. Bradford Hill's 9 tenets on causal associations in the consideration of disease and the environment.[36] Specifically, during the 1918-1919 pandemic, the relation of early, sustained, and layered nonpharmaceutical interventions to EDR in 43 US cities demonstrate satisfaction of the criteria of *strength* (the magnitude and statistical significance of our findings, which also argue against an association by chance alone), *consistency* (early and combined nonpharmaceutical interventions were consistently associated with reductions in mortality, and our analysis is consistent with 2 recent smaller, preliminary historical epidemiological reports, although these studies look at only 16 US urban centers, do not include actual activation and deactivation time points, duration, or layering of nonpharmaceutical interventions, and rely extensively on secondary historical sources.[37,38]

Further, our retrospective study is consistent with the results from recent theoretical models of the spread of a contemporary pandemic, which highlight the value of early, combined, and sustained nonpharmaceutical interventions to mitigate a pandemic[11-15]), *specificity* (best demonstrated in cities with bimodal mortality peaks when the triggers were activated, deactivated, and reactivated), *temporality* (interventions always preceded the reduction of EDR), *dose response* (layering and increased duration of the nonpharmaceutical interventions were associated with better outcomes), *biological plausibility* (these interventions reduce person-to-person interactions and biologically would be expected to reduce the spread of a communicable agent such as influenza), *coherence* (our data align with the established body of knowledge on the epidemiology of influenza), and *analogy* (isolation and social distancing have been demonstrated as effective means of preventing person-to-person spread of other respiratory tract diseases, such as rhinovirus, severe acute respiratory syndrome, respiratory syncytial virus, varicella, and seasonal influenza).

The ninth tenet, *experiment*, could not be demonstrated directly because of the paucity of influenza pandemics in the past century, the trend away from such traditional public health mea-

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sures for disease control during the past 50 years, and ethical limitations of using population-wide nonpharmaceutical interventions in the absence of a serious threat.

These findings contrast with the conventional wisdom that the 1918 pandemic rapidly spread through each community killing everyone in its path. Although these urban communities had neither effective vaccines nor antivirals, cities that were able to organize and execute a suite of classic public health interventions before the pandemic swept fully through the city appeared to have an associated mitigated epidemic experience. Our study suggests that nonpharmaceutical interventions can play a critical role in mitigating the consequences of future severe influenza pandemics (category 4 and 5) and should be considered for inclusion in contemporary planning efforts as companion measures to developing effective vaccines and medications for prophylaxis and treatment. The history of US epidemics also cautions that the public's acceptance of these health measures is enhanced when guided by ethical and humane principles.[39-41]

Author Contributions: Drs Markel and Cetron had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.
Study concept and design: Markel, Lipman, Navarro, Stern, Cetron.
Acquisition of data: Markel, Navarro, Sloan, Michalsen, Stern.
Analysis and interpretation of data: Markel, Lipman, Navarro, Sloan, Michalsen, Stern, Cetron.
Drafting of the manuscript: Markel, Lipman, Navarro, Sloan, Michalsen, Stern, Cetron.
Critical revision of the manuscript for important intellectual content: Markel, Lipman, Navarro, Stern, Cetron.
Statistical analysis: Markel, Lipman, Cetron.
Obtained funding: Markel, Cetron.
Administrative, technical, or material support: Markel, Navarro, Sloan, Michalsen, Cetron.
Study supervision: Markel, Cetron.
Financial Disclosures: None reported.
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Saturated fatty acids increase levels of low-density lipoprotein cholesterol (LDL-C) and HDL-C,[2] whereas *trans*-fatty acids increase LDL-C level but decrease HDL-C level.[2,3] This distinction is important, because *trans*-fatty acids are more strongly associated with the risk of cardiovascular disease than saturated fatty acids due to their undesirable effects on LDL-C and HDL-C levels, endothelial cell function, adipocytes, and inflammatory response.[3,4]

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In Reply: Dr Kim distinguishes the effects of saturated fatty acids and *trans*-fatty acids on lipoproteins. However, reports of the effect of *trans*-fatty acids on HDL-C have been variable, with a large meta-analysis finding a statistically nonsignificant effect on HDL-C.[1] In addition to increasing levels of LDL-C, *trans*-fatty acids promote vascular inflammation and endothelial dysfunction and reduce paraoxonase activity.[2] These lipid and biochemical effects act synergistically to increase cardiovascular disease risk.[2]

The issue is more complex than indicated by HDL-C. Saturated fat rapidly promotes proinflammatory changes in HDL without changing HDL-C level.[3] Thus, as mentioned in our review, dietary intake of both saturated fatty acids and *trans*-fatty acids should be avoided and substituted with intake of monounsaturated and polyunsaturated fatty acids.

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CORRECTIONS

Data Error: In the Review article entitled "Data Extraction Errors in Meta-analyses That Use Standardized Mean Differences" published in the July 25, 2007, issue of *JAMA* (2007;298:430-437), Figure 4 included incorrect data. The reported point estimate and its 95% confidence interval for the meta-analysis standardized mean differences "-0.74 (-0.98 to -0.49)" for the Edmonds et al article should have read "-0.77 (-1.26 to -0.28)." The error was caused by a wrong label in the Cochrane Library at the time of the study. A meta-analysis was stated to have been done with a random-effects model; however, it was done with a fixed-effect model. The Cochrane Library no longer contains this error.

Typographical Errors in Tables: In the Research Letter entitled "Patterns of Prevalent Major Chronic Disease Among Older Adults in the United States" published in the September 12, 2007, issue of *JAMA* (2007;298[10]:1160-1162), both tables contained typographical errors. In both tables, the column headings of "Estimated Frequency (1000)" and "CVA" were erroneously transposed and the brace under the column head "Disease Pattern, No. of Diseases" should have extended to include the CVA column. Online versions of this article on the *JAMA* Web site were corrected on October 4, 2007.

Unreported Financial Disclosures: In the Original Contribution entitled "Nonpharmaceutical Interventions Implemented by US Cities During the 1918-1919 Influenza Pandemic" published in the August 8, 2007, issue of *JAMA* (2007;298[6]:644-654), financial disclosures were inadvertently not reported. On page 654, under "Financial Disclosures," the following should appear: "Dr Markel reported having received honoraria for delivering lectures on the social and cultural history of the 1918-1919 influenza pandemic at academic conferences or colloquia presented by Yale University, the US Department of Defense, the RAND Corporation, Columbia University, the US Department of Health and Human Services, the Michigan Society for Infection Control and Prevention, University of Michigan, and Emory University. None of the other authors reported financial disclosures."

Incorrect Affiliation: In the Research Letter entitled "Cardiovascular Response to a Modern Roller Coaster Ride" published in the August 15, 2007, issue of *JAMA* (2007;298[7]:739-741), the affiliations were reversed for 2 authors and 1 author's name was listed out of order. Joachim Brade, MSc, is affiliated with the Department of Medical Statistics and Dariusch Haghi, MD, is affiliated with the 1st Department of Medicine-Cardiology, University Hospital of Mannheim, Mannheim, Germany. The name for Christian Wolpert, MD, should have been placed last among the list of author names.

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Coronavirus: Why You Must Act Now

Politicians, Community Leaders and Business Leaders: What Should You Do and When?

Tomas Pueyo
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Mar 10 · 26 min read

Updated on 3/13/2020.

With everything that's happening about the Coronavirus, it might be very hard to make a decision of what to do today. Should you wait for more information? Do something today? What?

Here's what I'm going to cover in this article, with lots of charts, data and models with plenty of sources:

- How many cases of coronavirus will there be in your area?
- What will happen when these cases materialize?
- What should you do?
- When?

When you're done reading the article, this is what you'll take away:

The coronavirus is coming to you.
It's coming at an exponential speed: gradually, and then suddenly.
It's a matter of days. Maybe a week or two.
When it does, your healthcare system will be overwhelmed.
Your fellow citizens will be treated in the hallways.
Exhausted healthcare workers will break down. Some will die.
They will have to decide which patient gets the oxygen and which one dies.
The only way to prevent this is social distancing today. Not tomorrow. Today.
That means keeping as many people home as possible, starting now.

As a politician, community leader or business leader, you have the power and the responsibility to prevent this.

You might have fears today: What if I overreact? Will people laugh at me? Will they be angry at me? Will I look stupid? Won't it be better to wait for others to take steps first?

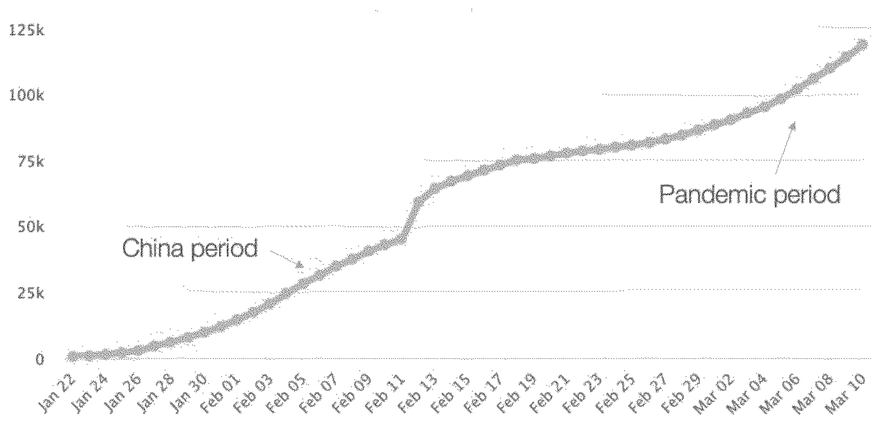
Will I hurt the economy too much?

But in 2–4 weeks, when the entire world is in lockdown, when the few precious days of social distancing you will have enabled will have saved lives, people won't criticize you anymore: They will thank you for making the right decision.

Ok, let's do this.

1. How Many Cases of Coronavirus Will There Be in Your Area?
Country Growth

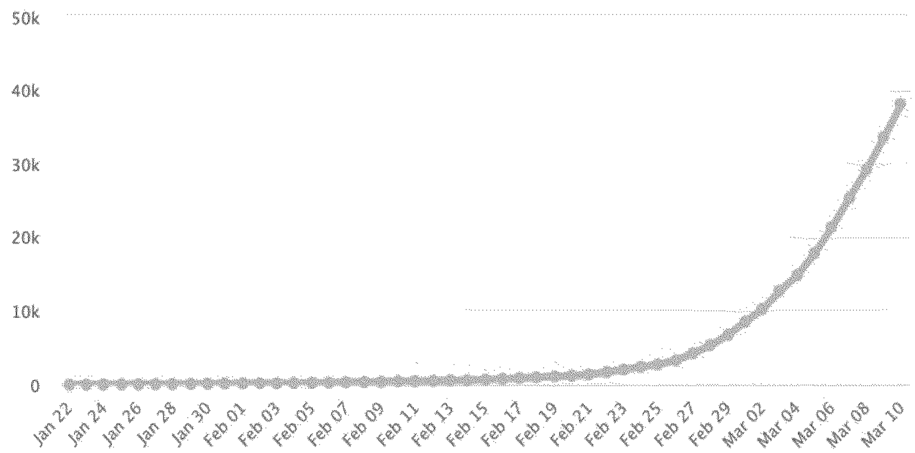
Chart 1: Total Worldwide Cases of Coronavirus



Source: Tomas Pueyo, based on worldometers chart and data: https://www.worldometers.info/coronavirus/coronavirus-cases/

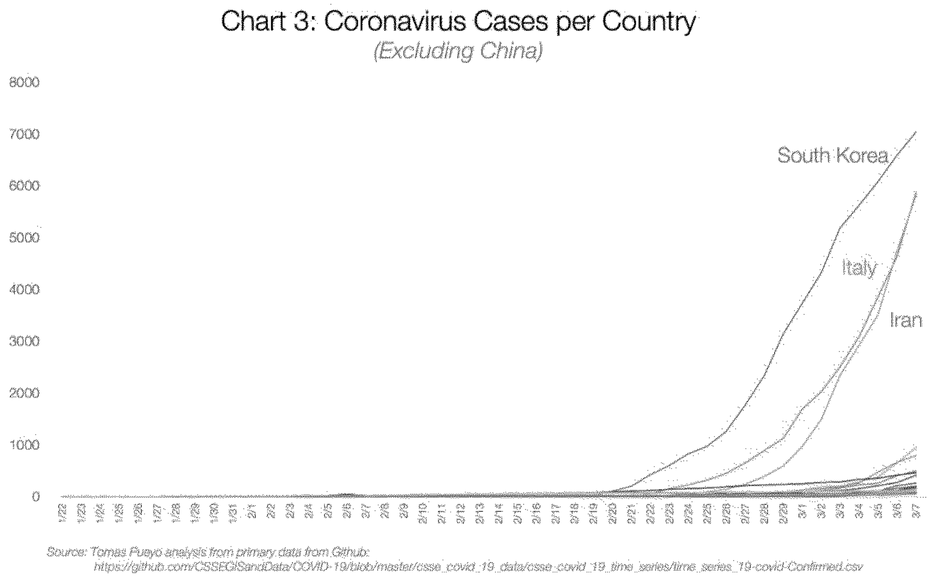
The total number of cases grew exponentially until China contained it. But then, it leaked outside, and now it's a pandemic that nobody can stop.

Chart 2: Total Cases of Coronavirus Outside of China

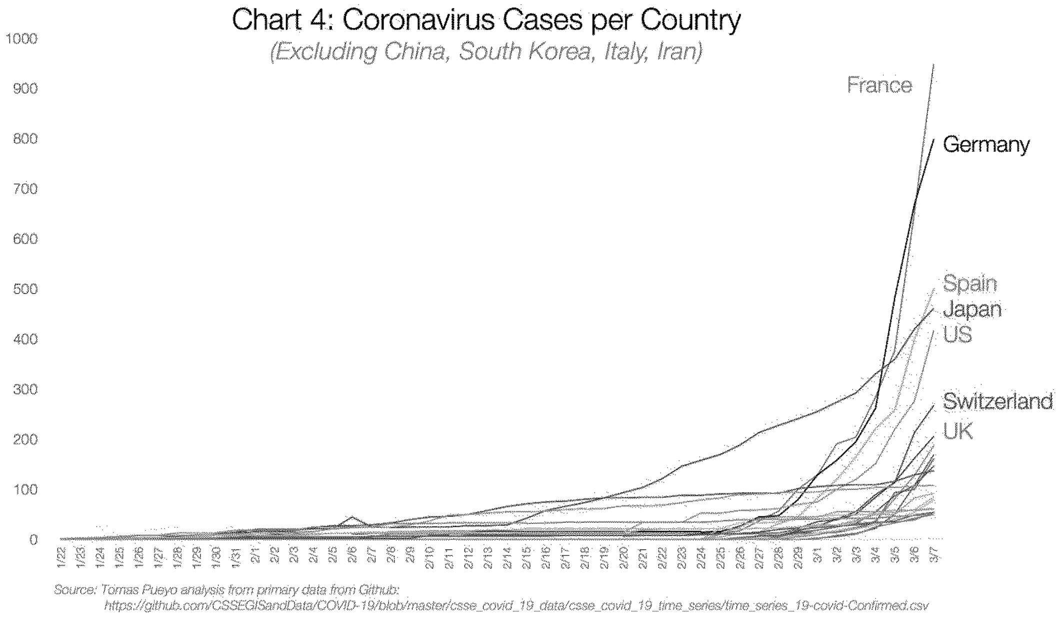


Source: Tomas Pueyo, based on worldometers chart and data: https://www.worldometers.info/coronavirus/coronavirus-cases/

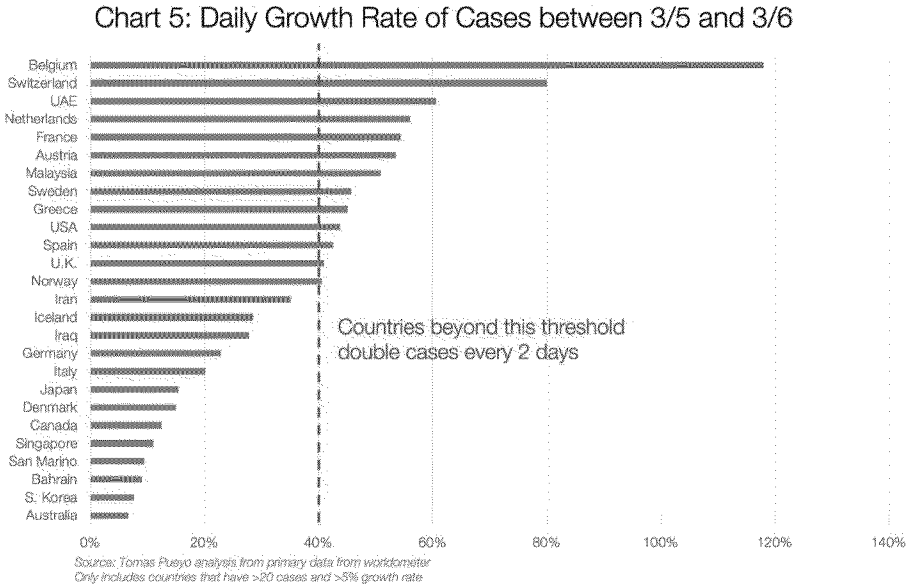
As of today, this is mostly due to Italy, Iran and South Korea:



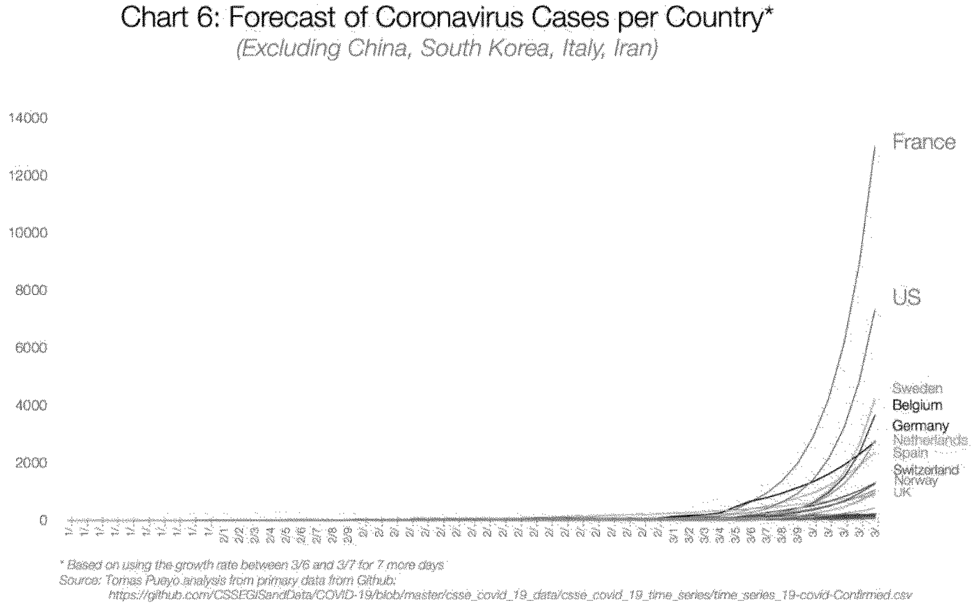
There are so many cases in South Korea, Italy and Iran that it's hard to see the rest of the countries, but let's zoom in on that corner at the bottom right.



There are dozens of countries with exponential growth rates. As of today, most of them are Western.

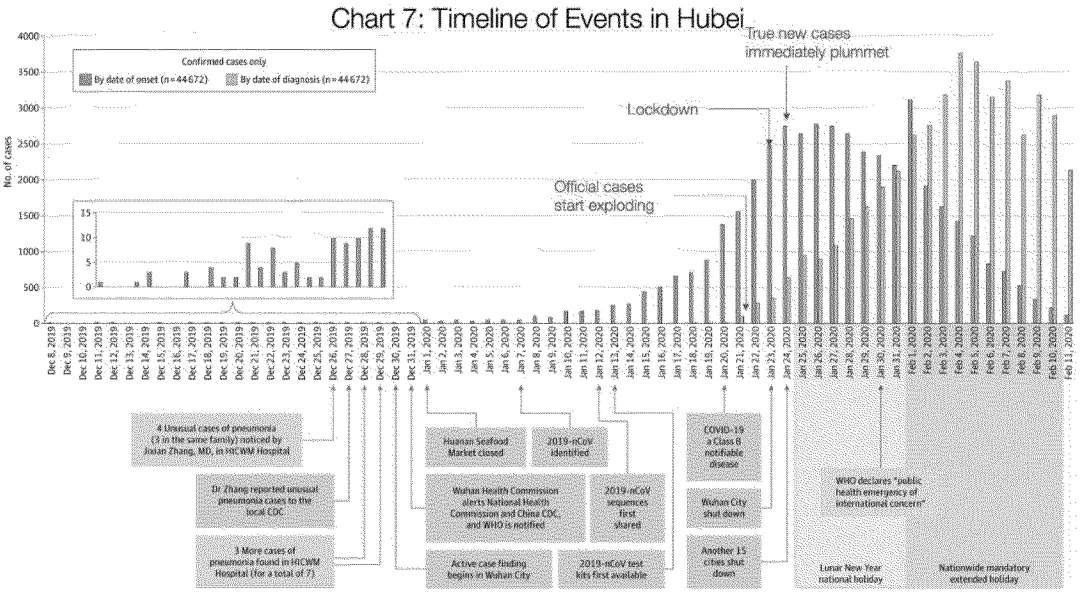


If you keep up with that type of growth rate for just a week, this is what you get:



If you want to understand what will happen, or how to prevent it, you need to look at the cases that have already gone through this: China, Eastern countries with SARS experience, and Italy.

China



Source: Tomas Pueyo analysis over chart from the Journal of the American Medical Association, based on raw case data from the Chinese Center for Disease Control and Prevention

This is one of the most important charts.

It shows in orange bars the daily official number of cases in the Hubei province: How many people were diagnosed that day.

The grey bars show the **true** daily coronavirus cases. The Chinese CDC found these by asking patients during the diagnostic when their symptoms started.

Crucially, these true cases weren't known at the time. We can only figure them out looking backwards: The authorities don't know that somebody just started having symptoms. They know when somebody goes to the doctor and gets diagnosed.

What this means is that the orange bars show you what authorities knew, and the grey ones what was really happening.

On January 21st, the number of new diagnosed cases (orange) is exploding: there are around 100 new cases. In reality, there were 1,500 new cases that day, growing exponentially. But the authorities didn't know that. What they knew was that suddenly there were 100 new cases of this new illness.

Two days later, authorities shut down Wuhan. At that point, the number of diagnosed daily new cases was ~400. Note that number: they made a decision to close the city with just 400 new cases in a day. In reality, there were 2,500 new cases that day, but they didn't know that.

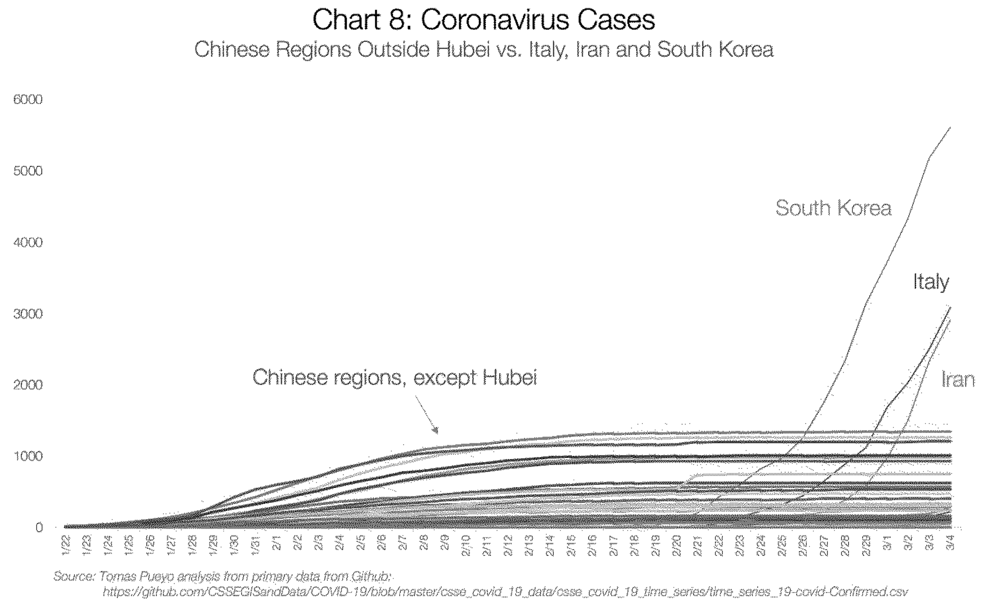
The day after, another 15 cities in Hubei shut down.

Up until Jan 23rd, when Wuhan closes, you can look at the grey graph: it's growing exponentially. True cases were exploding. As soon as Wuhan shuts down, cases slow down. On Jan 24th, when another 15 cities shut down, the number of true cases (again, grey) grinds to a halt. Two days later, the maximum number of true cases was reached, and it has gone down ever since.

Note that the orange (official) cases were still growing exponentially: For 12 more days, it looked like this thing was still exploding. But it wasn't. It's just that the cases were getting stronger symptoms and going to the doctor more, and the system to identify them was stronger.

This concept of official and true cases is important. Let's keep it in mind for later.

The rest of regions in China were well coordinated by the central government, so they took immediate and drastic measures. This is the result:

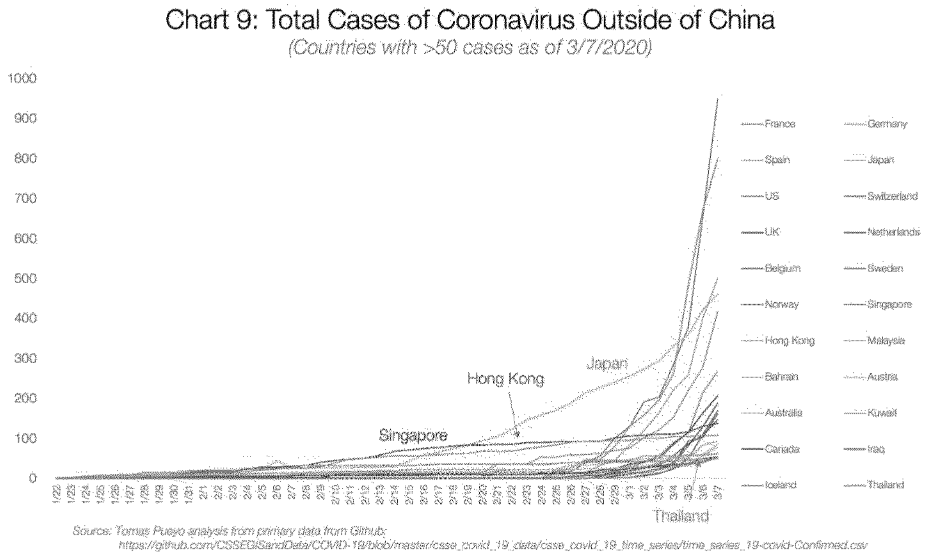


Every flat line is a Chinese region with coronavirus cases. Each one had the potential to become exponential, but thanks to the measures happening just at the end of January, all of them stopped the virus before it could spread.

Meanwhile, South Korea, Italy and Iran had a full month to learn, but didn't. They started the same exponential growth of Hubei and passed every other Chinese region before the end of February.

Eastern Countries

South Korea cases have exploded, but have you wondered why Japan, Taiwan, Singapore, Thailand or Hong Kong haven't?



Taiwan didn't even make it to this graph because it didn't have the 50 cases threshold that I used.

All of them were hit by SARS in 2003, and all of them learned from it. They learned how viral and lethal it could be, so they knew to take it seriously. That's why all of their graphs, despite starting to grow much earlier, still don't look like exponentials.

So far, we have stories of coronavirus exploding, governments realizing the threat, and containing them. For the rest of the countries, however, it's a completely different story.

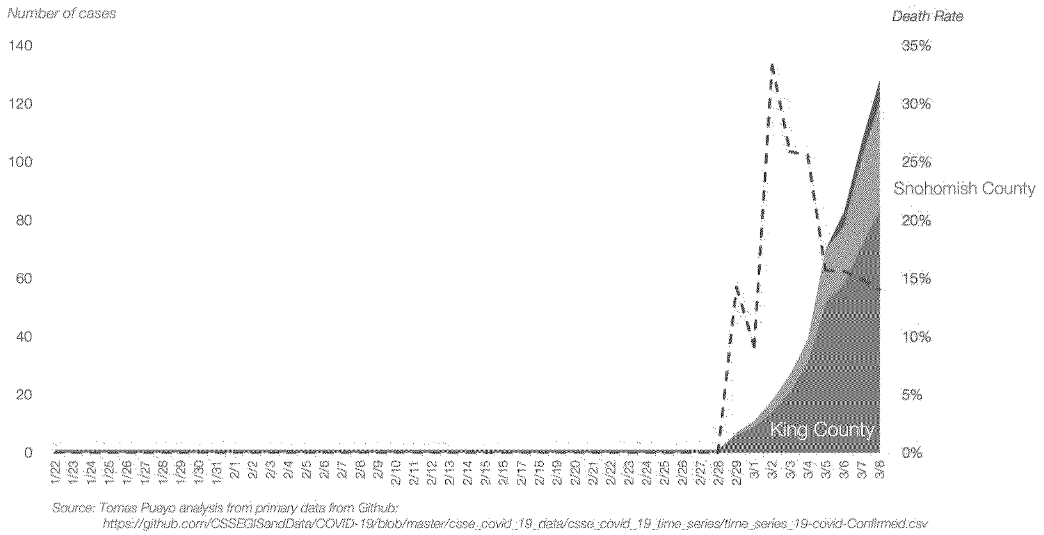
Before I jump to them, a note about South Korea: The country is probably an outlier. The coronavirus was contained for the first 30 cases. Patient 31 was a super-spreader who passed it to thousands of other people. Because the virus spreads before people show symptoms, by the time the authorities realized the issue, the virus was out there. They're now paying the consequences of that one instance. Their containment efforts show, however: Italy has already passed it in numbers of cases, and Iran will pass it tomorrow (3/10/2020).

Washington State

You've already seen the growth in Western countries, and how bad forecasts of just one week look like. Now imagine that containment doesn't happen like in Wuhan or in other Eastern countries, and you get a colossal epidemic.

Let's look at a few cases, such as Washington State, the San Francisco Bay Area, Paris and Madrid.

Chart 10: Washington State Cases and Death Rate



Washington State is the US's Wuhan. The number of cases there is growing exponentially. It's currently at 140.

But something interesting happened early on. The death rate was through the roof. At some point, the state had 3 cases and one death.

We know from other places that the death rate of the coronavirus is anything between 0.5% and 5% (more on that later). How could the death rate be 33%?

It turned out that the virus had been spreading undetected for weeks. It's not like there were only 3 cases. It's that authorities only knew about 3, and one of them was dead because the more serious the condition, the more likely somebody is to be tested.

This is a bit like the orange and grey bars in China: Here they only knew about the orange bars (official cases) and they looked good: just 3. But in reality, there were hundreds, maybe thousands of true cases.

This is an issue: You only know the official cases, not the true ones. But you need to know the true ones. How can you estimate the true ones? It turns out, there's a couple of ways. And I have a model for both, so you can play with the numbers too (direct link to copy of the model).

First, through deaths. If you have deaths in your region, you can use that to guess the number of true current cases. We know approximately how long it takes for that person to go from catching the virus to dying on average (17.3 days). That means the person who died on 2/29 in Washington State probably got infected around 2/12.

Then, you know the mortality rate. For this scenario, I'm using 1% (we'll discuss later the details). That means that, around 2/12, there were already around ~100 cases in the area (of which only one ended up in death 17.3 days later).

Now, use the average doubling time for the coronavirus (time it takes to double cases, on average). It's 6.2. That means that, in the 17 days it took this person to die, the cases had to multiply by ~8 (=2^(17/6)). That means that, if you are not diagnosing all cases, one death today means 800 true cases today.

Washington state has today 22 deaths. With that quick calculation, you get ~16,000 true coronavirus cases today. *As many as the official cases in Italy and Iran combined.*

If we look into the detail, we realize that 19 of these deaths were from one cluster, which might not have spread the virus widely. So if we consider those 19 deaths as one, the total deaths in the state is four. Updating the model with that number, we still get ~3,000 cases today.

This approach from Trevor Bedford looks at the viruses themselves and their mutations to assess the current case count.

The conclusion is that there are likely ~1,100 cases in Washington state right now.
None of these approaches are perfect, but they all point to the same message: We don't know the number of true cases, but it's much higher than the official one. It's not in the hundreds. It's in the thousands, maybe more.

San Francisco Bay Area

Until 3/8, the Bay Area didn't have any death. That made it hard to know how many true cases there were. Officially, there were 86 cases. But the US is vastly undertesting because it doesn't have enough kits. The country decided to create their own test kit, which turned out not to work.
These were the number of tests carried out in different countries by March 3rd:

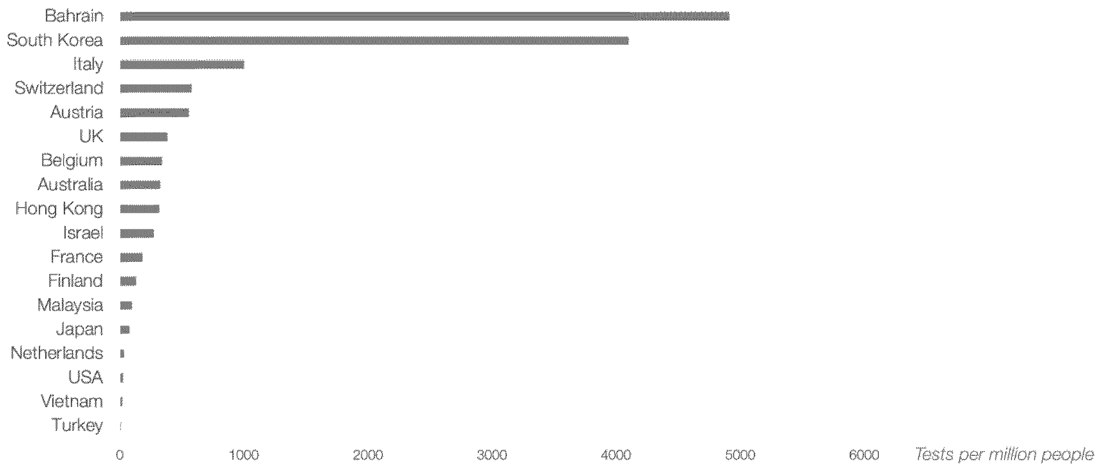
Country	Tests Performed	Tests Per Million Citizens	Positive Test Rate
South Korea	109,591	2,138	4.4%
Italy	23,345	386	8.7%
Austria	2,120	235	0.8%
Switzerland	1,850	214	1.6%
UK	13,525	199	0.3%
Finland	130	23	5.4%
Turkey	940	11	0.0%
United States	472	1	21.8%

Source: *Tomas Pueyo analysis with data from Worldometer*
https://www.worldometers.info/coronavirus/covid-19-testing/

Sources for each number here

Turkey, with no cases of coronavirus, had 10 times the testing per inhabitant than the US. The situation is not much better today, with ~8,000 tests performed in the US, which means ~4,000 people have been tested.

Chart 10.b: Coronavirus Tests Performed per Million People for Different Countries
(as of March 9th)



*Source: Tomas Pueyo analysis from data aggregated by Worldometers: https://www.worldometers.info/coronavirus/covid-19-testing/
Per country sources available at Worldometers or at:
https://docs.google.com/spreadsheets/d/17YyCmjb2Z2QwMiRRwAb7W0vQoEAiL9Co0ARsl03dSlw/edit#gid=508476959*

Here, you can just use a share of official cases to true cases. How to decide which one?

For the Bay Area, they were testing everybody who had traveled or was in contact with a traveler, which means that they knew most of the travel-related cases, but none of the community spread cases. By having a sense of community spread vs. travel spread, you can know how many true cases there are.

I looked at that ratio for South Korea, which has great data. By the time they had 86 cases, the % of them from community spread was 86% (86 and 86% are a coincidence).

With that number, you can calculate the number of true cases. If the Bay Area has 86 cases today, it is likely that the true number is ~600.

France and Paris

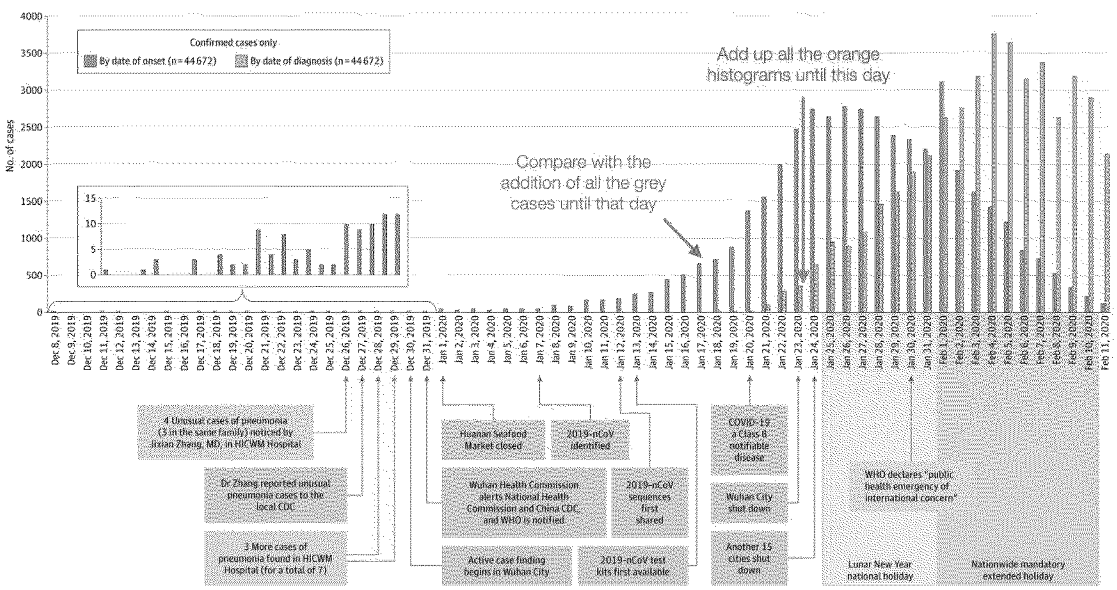
France claims 1,400 cases today and 30 deaths. Using the two methods above, you can have a range of cases: **between 24,000 and 140,000.**

The true number of coronavirus cases in France today is likely to be between 24,000 and 140,000.

Let me repeat that: the number of true cases in France is likely to be between one and two orders or magnitude higher than it is officially reported.

Don't believe me? Let's look at the Wuhan graph again.

Chart 11: Timeline of Events in Hubei



Source: Tomas Pueyo analysis over chart and data from the Journal of the American Medical Association

If you stack up the orange bars until 1/22, you get 444 cases. Now add up all the grey bars. They add up to ~12,000 cases. So when Wuhan thought it had 444 cases, it had 27 times more. If France thinks it has 1,400 cases, it might well have tens of thousands

The same math applies to Paris. With ~30 cases inside the city, the true number of cases is likely to be in the hundreds, maybe thousands. With 300 cases in the Ile-de-France region, the total cases in the region might already exceed tens of thousands.

Spain and Madrid

Spain has very similar numbers as France (1,200 cases vs. 1,400, and both have 30 deaths). That means the same rules are valid: Spain has probably upwards of 20k true cases already.
In the Comunidad de Madrid region, with 600 official cases and 17 deaths, the true number of cases is likely between 10,000 and 60,000.

If you read these data and tell yourself: "*Impossible, this can't be true*", just think this: With this number of cases, Wuhan was already in lockdown.

With the number of cases we see today in countries like the US, Spain, France, Iran, Germany, Japan, Netherlands, Denmark, Sweden or Switzerland, Wuhan was already in lockdown.

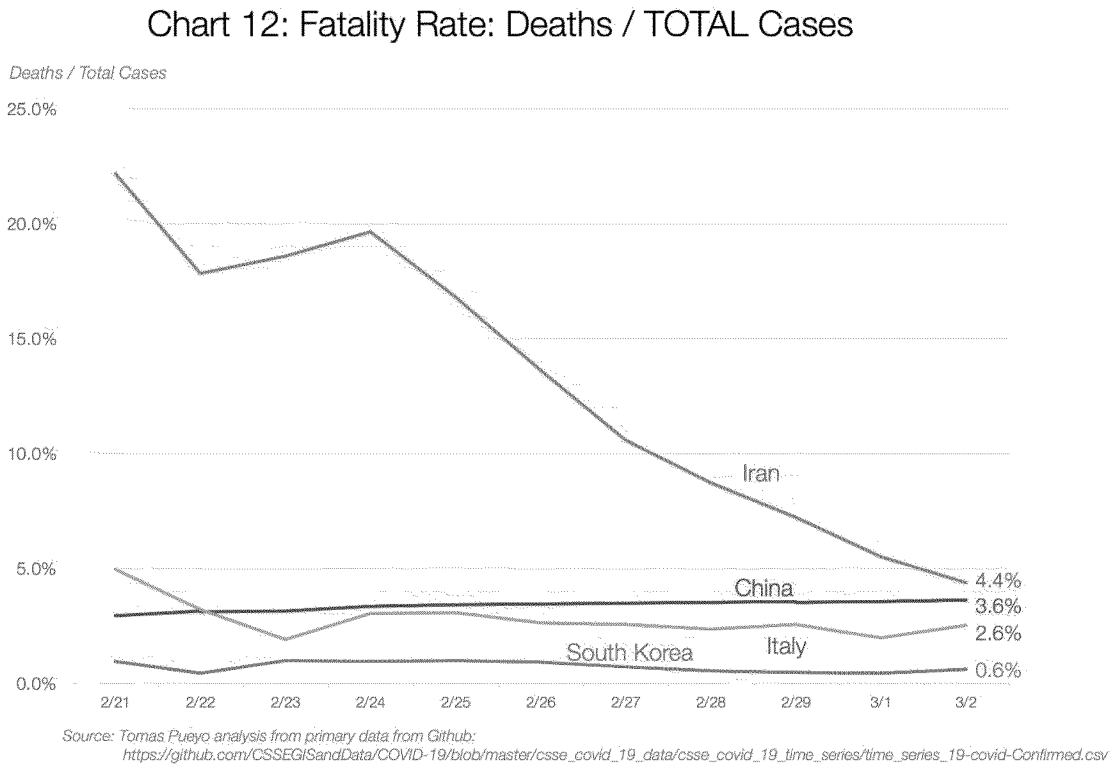
And if you're telling yourself: *"Well, Hubei is just one region"*, let me remind you that it has nearly 60 million people, bigger than Spain and about the size of France.

2. What Will Happen When These Coronavirus Cases Materialize?

So the coronavirus is already here. It's hidden, and it's growing exponentially.
What will happen in our countries when it hits? It's easy to know, because we already have several places where it's happening. The best examples are Hubei and Italy.

Fatality Rates

The World Health Organization (WHO) quotes 3.4% as the fatality rate (% people who contract the coronavirus and then die). This number is out of context so let me explain it.



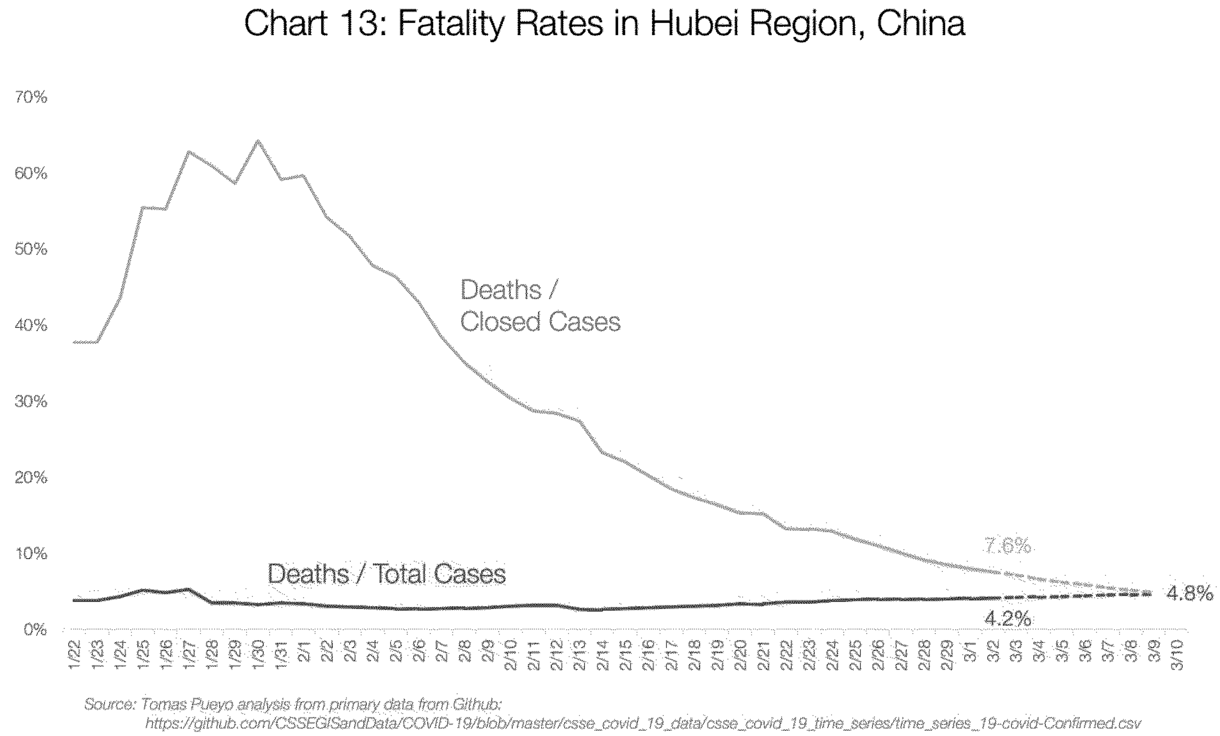
It really depends on the country and the moment: between 0.6% in South Korea and 4.4% in Iran. So what is it? We can use a trick to figure it out.

The two ways you can calculate the fatality rate is Deaths/Total Cases and Death/Closed Cases. The first one is likely to be an underestimate, because lots of open cases can still end up in death. The second is an overestimate, because it's likely that deaths are closed quicker than recoveries.

What I did was look at how both evolve over time. Both of these numbers will converge to the same result once all cases are closed, so if you project past trends to the future, you can make a guess on what the final fatality rate will be.

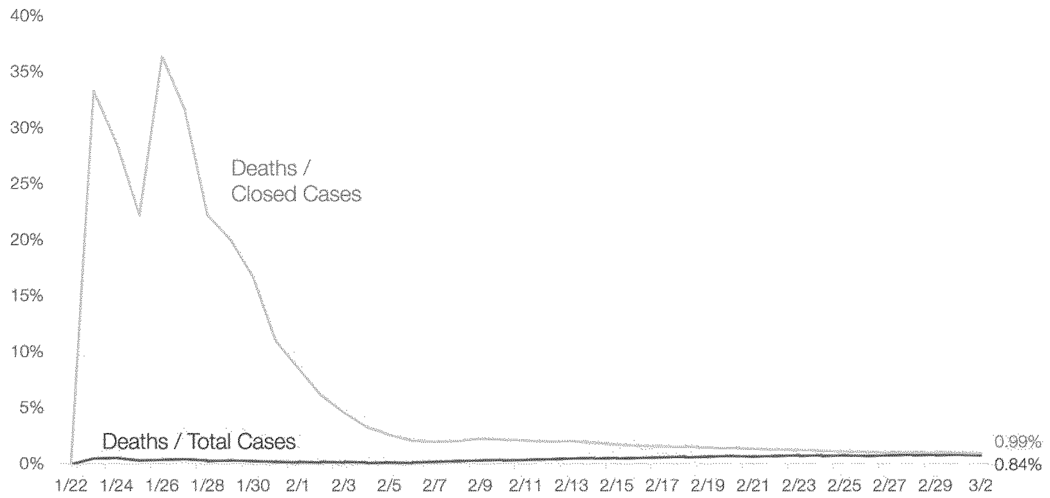
This is what you see in the data. China's fatality rate is now between 3.6% and 6.1%. If you project that in the future, it looks like it converges towards ~3.8%-4%. This is double the current estimate, and 30 times worse than the flu.

It is made up of two completely different realities though: Hubei and the rest of China.



Hubei's fatality rate will probably converge towards 4.8%. Meanwhile, for the rest of China, it will likely converge to ~0.9%:

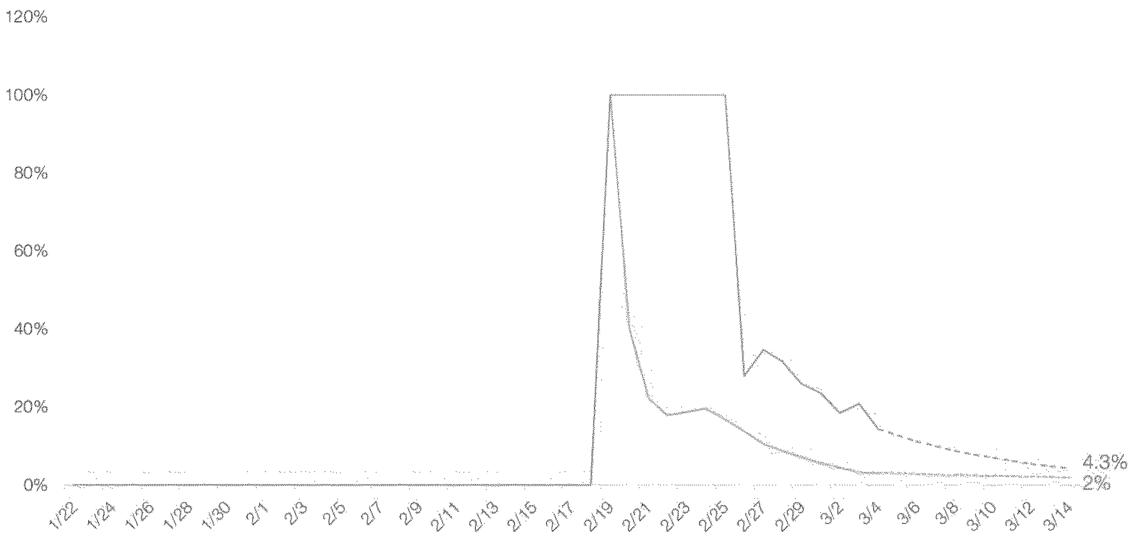
Chart 14: Fatality Rates in China, Excluding Hubei



Source: Tomas Pueyo analysis from primary data from Github:
https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_19-covid-Confirmed.csv

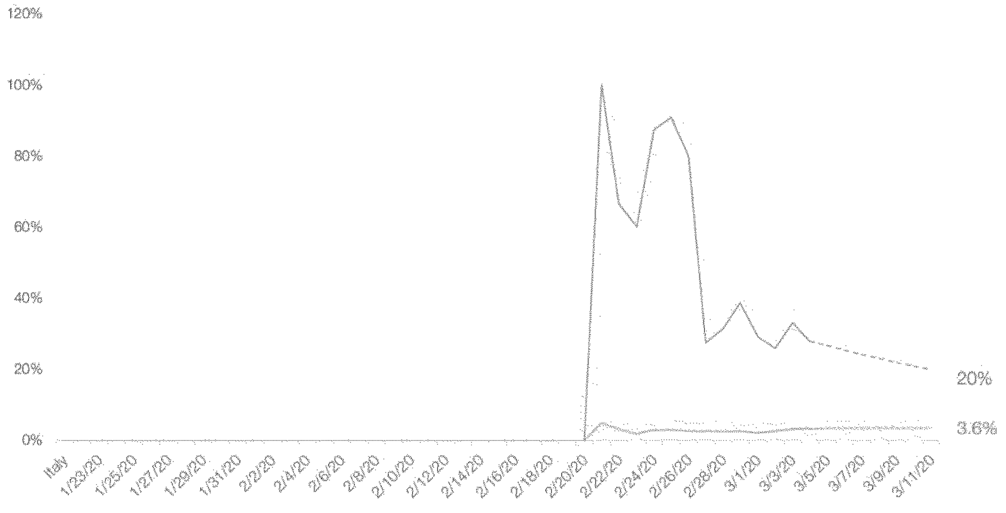
I also charted the numbers for Iran, Italy and South Korea, the only countries with enough deaths to make this somewhat relevant.

Chart 15: Projection of Coronavirus Fatality Rate in Iran



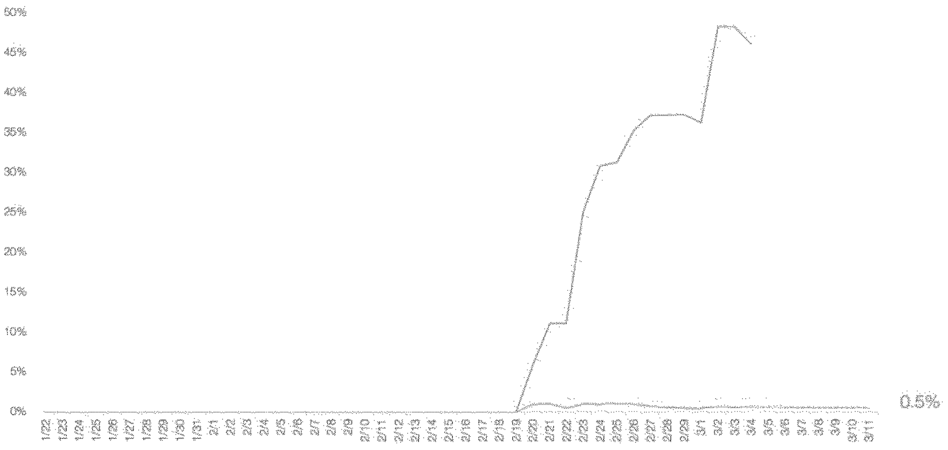
Source: Tomas Pueyo analysis from primary data from Github:
https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_19-covid-Confirmed.csv

Chart 16: Projection of Coronavirus Fatality Rate in Italy



Source: Tomas Pueyo analysis from primary data from Github:
https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_19-covid-Confirmed.csv

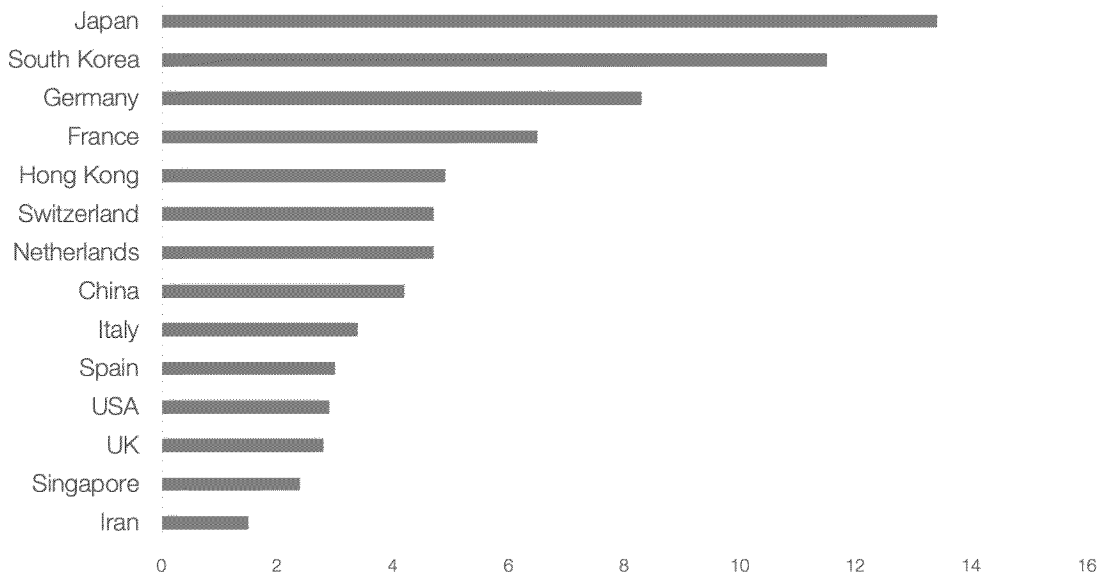
Chart 17: Projection of Coronavirus Fatality Rate in South Korea



Source: Tomas Pueyo analysis from primary data from Github:
https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_19-covid-Confirmed.csv

Iran's and Italy's Deaths / Total Cases are both converging towards the 3%-4% range. My guess is their numbers will end up around that figure too.

Chart 17.b: Beds / 1,000 People in Different Countries



Source: Tomas Pueyo analysis from primary data from World Bank
https://data.worldbank.org/indicator/SH.MED.BEDS.ZS

South Korea is the most interesting example, because these 2 numbers are completely disconnected: deaths / total cases is only 0.6%, but deaths / closed cases is a whopping 48%. My take on it is that a few unique things are happening there. First, they're testing everybody (with so many open cases, the death rate seems low), and leaving the cases open for longer (so they close cases quickly when the patient is dead). Second, they have a lot of hospital beds (see chart 17.b). There might also be other reasons we don't know. What is relevant is that deaths/cases has hovered around 0.5% since the beginning, suggesting it will stay there, likely heavily influenced by the healthcare system and crisis management.

The last relevant example is the Diamond Princess cruise: with 706 cases, 6 deaths and 100 recoveries, the fatality rate will be between 1% and 6.5%.

Note that the age distribution in each country will also have an impact: Since mortality is much higher for older people, countries with an aging population like Japan will be harder hit on average than younger countries like Nigeria. There are also weather factors, especially humidity and temperature, but it's still unclear how this will impact transmission and fatality rates.

This is what you can conclude:

- Excluding these, countries that are prepared will see a fatality rate of ~0.5% (South Korea) to 0.9% (rest of China).

- Countries that are overwhelmed will have a fatality rate between ~3%-5%

Put in another way: Countries that act fast can reduce the number of deaths by a factor of ten. And that's just counting the fatality rate. Acting fast also drastically reduces the cases, making this even more of a no-brainer.

Countries that act fast reduce the number of deathsat least by 10x.

So what does a country need to be prepared?

What Will Be the Pressure on the System

Around 20% of cases require hospitalization, 5% ofcases require the Intensive Care Unit (ICU), and around 2.5% require very intensive help, with items such as ventilators or ECMO (extra-corporeal oxygenation).

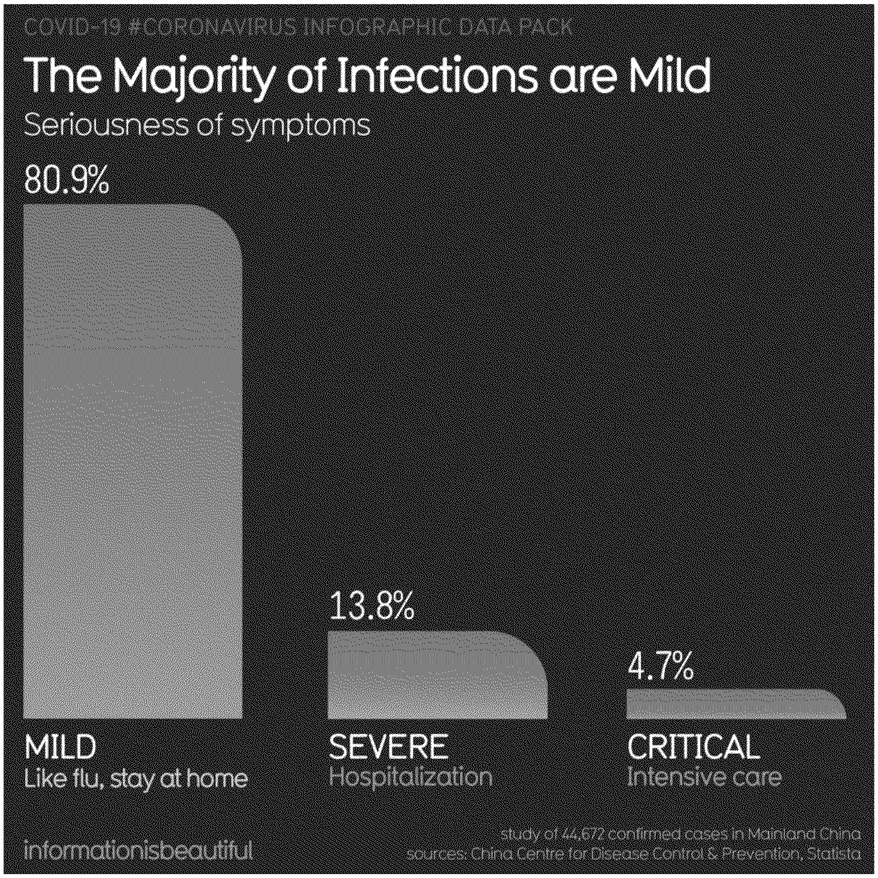
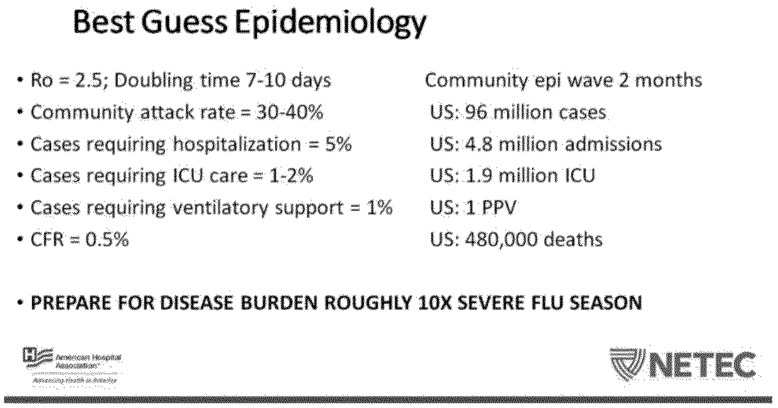


Chart 18: Slide from a Webinar of the American Hospital Association, communicating best guesses on the impact of the Coronavirus in the US healthcare system in 2020



AHA webinar

Source: Dr. James Lawler, professor at the University of Nebraska Medical Center, for the American Hospital Association, via Business Insider, https://www.businessinsider.com/presentation-us-hospitals-preparing-for-millions-of-hospitalizations-2020-3

The problem is that items such as ventilators and ECMO can't be produced or bought easily. A few years ago, the US had a total of 250 ECMO machines, for example.

So if you suddenly have 100,000 people infected, many of them will want to go get tested. Around 20,000 will require hospitalization, 5,000 will need the ICU, and 1,000 will need machines that we don't have enough of today. And that's just with 100,000 cases.

That is without taking into account issues such as masks. A country like the US has only 1% of the masks it needs to cover the needs of its healthcare workers (12M N95, 30M surgical vs. 3.5B needed). If a lot of cases appear at once, there will be masks for only 2 weeks.

Countries like Japan, South Korea, Hong Kong or Singapore, as well as Chinese regions outside of Hubei, have been prepared and given the care that patients need.
But the rest of Western countries are rather going in the direction of Hubei and Italy. So what is happening there?

What an Overwhelmed Healthcare System Looks Like

The stories that happened in Hubei and those in Italy are starting to become eerily similar. Hubei built two hospitals in ten days, but even then, it was completely overwhelmed.

Both complained that patients inundated their hospitals. They had to be taken care of anywhere: in hallways, in waiting rooms...

I heavily recommend this short Twitter thread. It paints a pretty stark picture of Italy today

Medico Humanitas su Facebook: "Situazione drammatica, altro che normale influenza"
Pubblichiamo l'intervento sui social di Daniele Macchini, medico alle Cliniche Humanitas Gavazzeni. Una testimonianza...
bergamo.corriere.it

Healthcare workers spend hours in a single piece of protective gear, because there's not enough of them. As a result, they can't leave the infected areas for hours. When they do, they crumble, dehydrated and exhausted. Shifts don't exist anymore. People are driven back from retirement to cover needs. People who have no idea about nursing are trained overnight to fulfill critical roles. Everybody is on call, always.

Francesca Mangiatordi, an Italian nurse that crumbled in the middle of the war with the Coronavirus

That is, until they become sick. Which happens a lot, because they're in constant exposure to the virus, without enough protective gear. When that happens, they need to be in quarantine for 14 days, during which they can't help. Best case scenario, 2 weeks are lost. Worst case, they're dead.

The worst is in the ICUs, when patients need to share ventilators or ECMOs. These are in fact impossible to share, so the healthcare workers must determine what patient will use it. That really means, which one lives and which one dies.

Coronavirus: 'We must choose who to treat,' says Italian doctor
An Italian doctor in Lombardy, a region of Italy that has been quarantined due to the new coronavirus (Covid-19)...
www.brusselstimes.com

"After a few days, we have to choose. [...] Not everyone can be intubated. We decide based on age and state of health." —Christian Salaroli, Italian MD.

Medical workers wear protective suits to attend to people sickened by the novel coronavirus, in the intensive care unit of a designated hospital in Wuhan, China, on Feb. 6. (China Daily/Reuters), via Washington Post

All of this is what drives a system to have a fatality rate of ~4% instead of ~0.5%. If you want your city or your country to be part of the 4%, don't do anything today.

Satellite images show Behesht Masoumeh cemetery in the Iranian city of Qom. Photograph: ©2020 Maxar Technologies. Via The Guardian and the The New York Times.

3. What Should You Do?

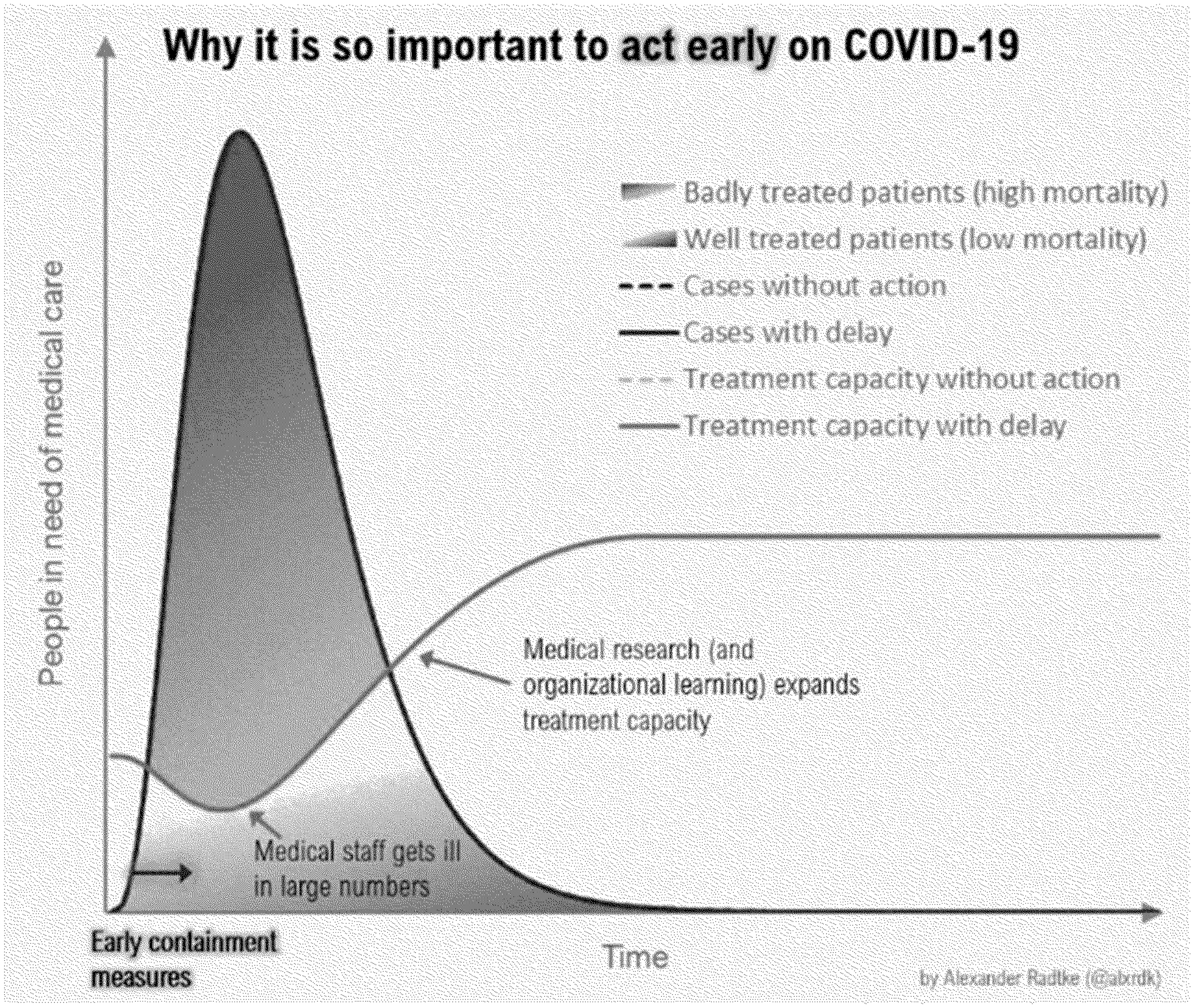
Flatten the Curve

This is a pandemic now. It can't be eliminated. But what we can do is reduce its impact. Some countries have been exemplary at this. The best one is Taiwan, which is extremely connected with China and yet still has as of today fewer than 50 cases. This recent paper explain all the measures they took early on, which were focused on containment.

Response to COVID-19 in Taiwan: Big Data Analytics, New Technology, and Proactive Testing
This Viewpoint describes the outbreak response infrastructure developed by the Taiwanese government following the SARS…
jamanetwork.com

They have been able to contain it, but most countries lacked this expertise and didn't. Now, they're playing a different game: mitigation. They need to make this virus as inoffensive as possible.

If we reduce the infections as much as possible, our healthcare system will be able to handle cases much better, driving the fatality rate down. And, if we spread this over time, we will reach a point where the rest of society can be vaccinated, eliminating the risk altogether. So our goal is not to eliminate coronavirus contagions. It's to postpone them.



Source

The more we postpone cases, the better the healthcare system can function, the lower the mortality rate, and the higher the share of the population that will be vaccinated before it gets infected.

How do we flatten the curve?

Social Distancing

There is one very simple thing that we can do and that works: social distancing.

If you go back to the Wuhan graph, you will remember that as soon as there was a lockdown, cases went down. That's because people didn't interact with each other, and the virus didn't spread.

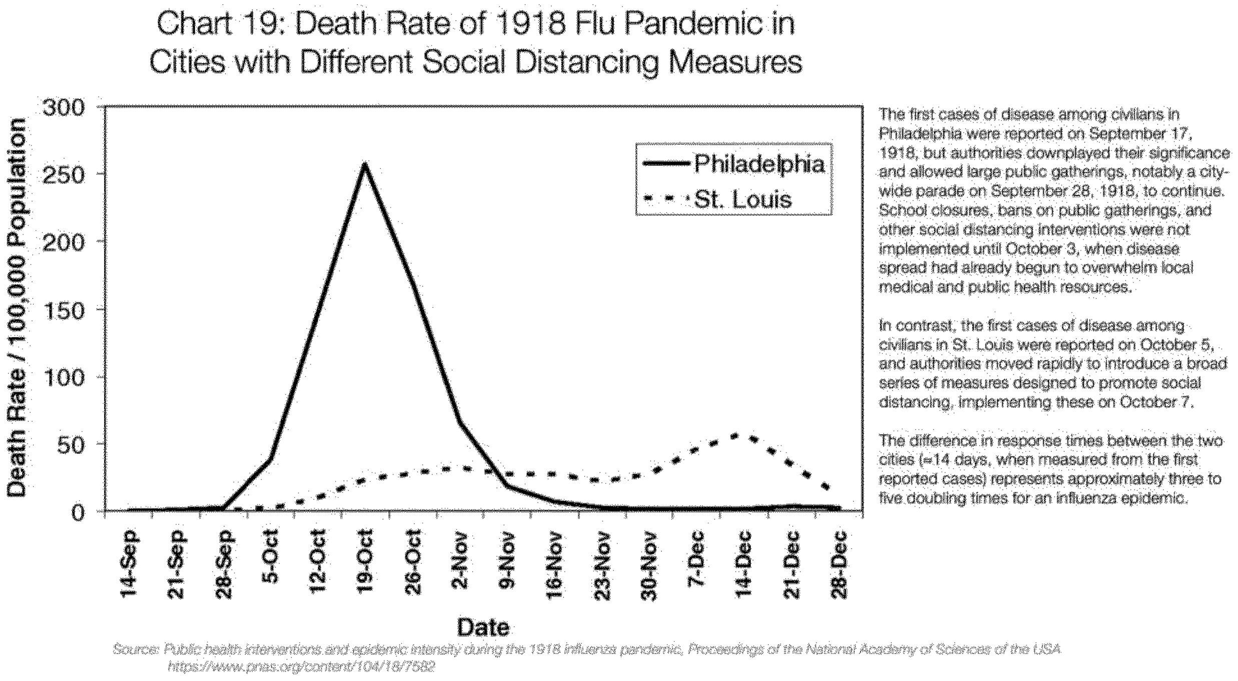
The current scientific consensus is that this virus can be spread within 2 meters (6 feet) if somebody coughs. Otherwise, the droplets fall to the ground and don't infect you.

The worst infection then becomes through surfaces: The virus survives for up to 9 days on different surfaces such as metal, ceramics and plastics. That means things like doorknobs, tables, or elevator buttons can be terrible infection vectors.

The only way to truly reduce that is with social distancing: Keeping people home as much as possible, for as long as possible until this recedes.

This has already been proven in the past. Namely, in the 1918 flu pandemic.

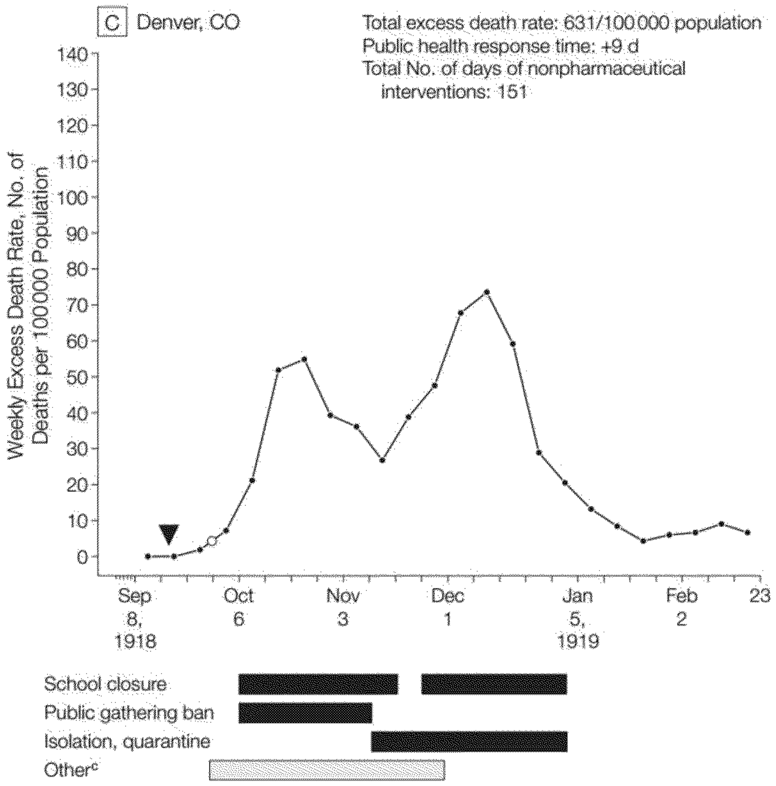
Learnings from the 1918 Flu Pandemic



You can see how Philadelphia didn't act quickly, and had a massive peak in death rates. Compare that with St Louis, which did.

Then look at Denver, which enacted measures and then loosened them. They had a double peak, with the 2nd one higher than the first

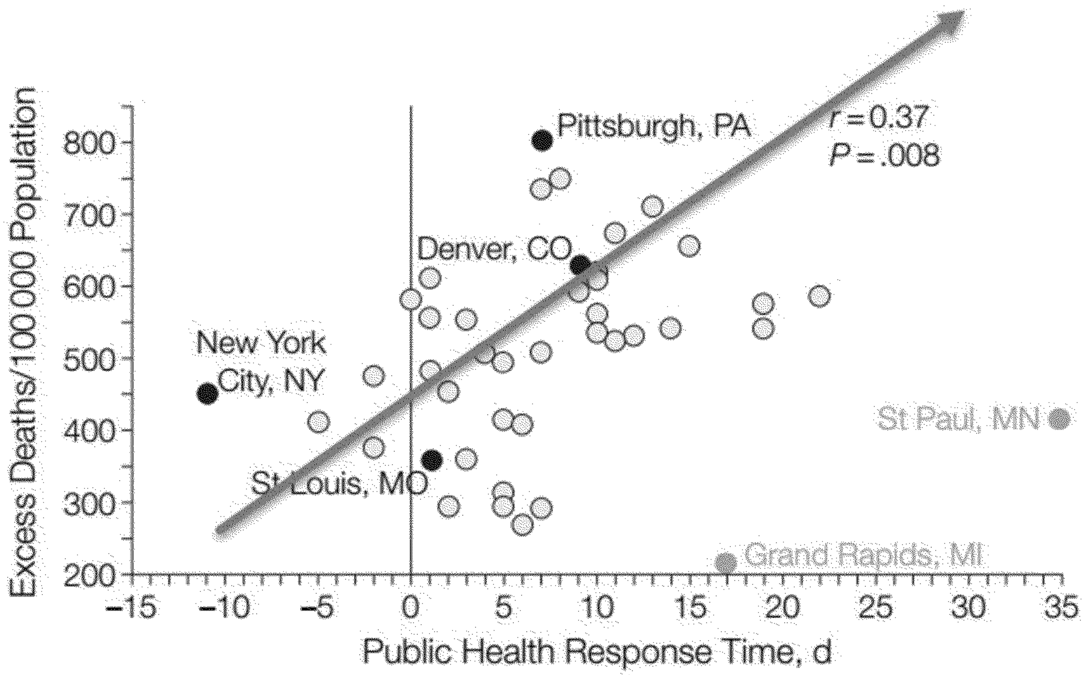
Chart 20: Excess Death in Denver during the 1918 Flu Pandemic



Source: Marginal Revolution, https://marginalrevolution.com/marginalrevolution/2020/03/what-worked-in-1918-1919.html

If you generalize, this is what you find:

Chart 21: Total excess pneumonia and influenza mortality by public health response time



Source: Marginal Revolution, https://marginalrevolution.com/marginalrevolution/2020/03/what-worked-in-1918-1919.html

This chart shows, for the 1918 flu in the US, how many more deaths there were per city depending on how fast measures were taken. For example, a city like St Louis took measures 6 days before Pittsburgh, and had less than half the deaths per citizen. On average, taking measures 20 days earlier halved the death rate.

Italy has finally figured this out. They first locked down Lombardy on Sunday, and one day later, on Monday, they realized their mistake and decided they had to lock down the entire country.

Hopefully, we will see results in the coming days. However, it will take one to two weeks to see. Remember the Wuhan graph: there was a delay of 12 days between the moment when the lockdown was announced and the moment when official cases (orange) started going down.

How Can Politicians Contribute to Social Distancing?

The question politicians are asking themselves today is not whether they should do something, but rather what's the appropriate action to take.

There are several stages to control an epidemic, starting with anticipation and ending with eradication. But it's too late for most options today. With this level of cases, the two only options politicians have in front of them are containment and mitigation.

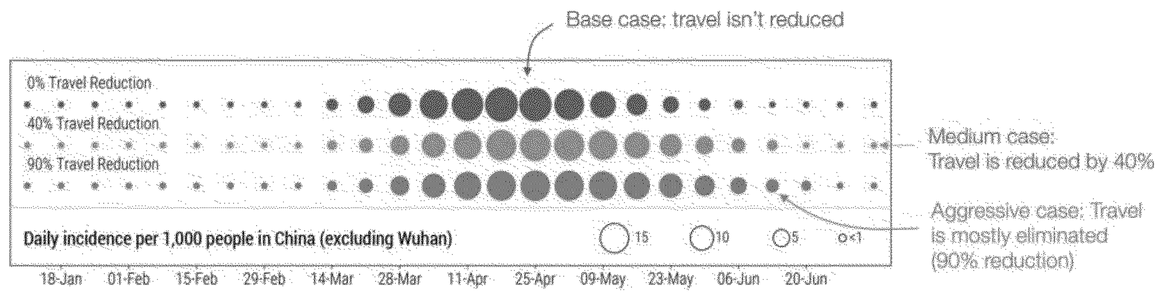
Containment

Containment is making sure all the cases are identified, controlled, and isolated. It's what Singapore, Hong Kong, Japan or Taiwan are doing so well: They very quickly limit people coming in, identify the sick, immediately isolate them, use heavy protective gear to protect their health workers, track all their contacts, quarantine them... This works extremely well when you're prepared and you do it early on, and don't need to grind your economy to a halt to make it happen.

I've already touted [Taiwan's approach]. But China's is good too. The lengths at which it went to contain the virus are mind-boggling. For example, they had up to [1,800 teams of 5 people] each tracking every infected person, everybody they got interacted with, then everybody those people interacted with, and isolating the bunch. That's how they were able to contain the virus across a billion-people country.

This is not what Western countries have done. And now it's too late. The [recent US announcement that most travel from Europe was banne] is a containment measure for a country that has, as of today, 3 times the cases that Hubei had when it shut down, growing exponentially. How can we know if it's enough? It turns out, we can know by looking at the Wuhan travel ban.

Chart 21.b: Delay in Coronavirus Spread in China, Based on Travel Restrictions



Source: Tomas Pueyo analysis on charts and data from paper: The effect of travel restrictions on the spread of the 2019 novel coronavirus (COVID-19) outbreak, Science Magazine, https://science.sciencemag.org/content/early/2020/03/05/science.aba9757

Link to source

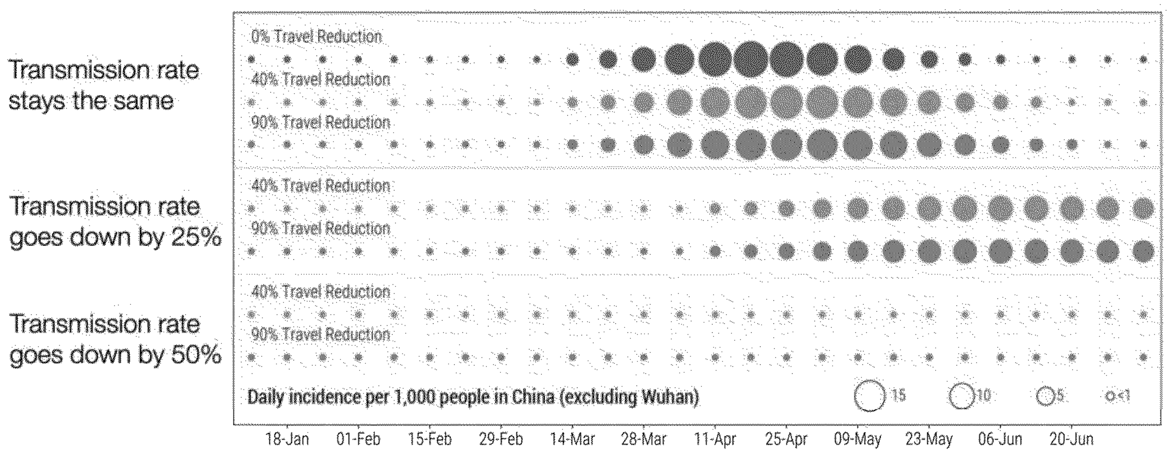
This chart shows the impact that the Wuhan travel ban had delaying the epidemic. The bubble sizes show the number of daily cases. The top line shows the cases if nothing is done. The two other lines show the impact if 40% and 90% of travel is eliminated. This is a model created by epidemiologists, because we can't know for sure.

If you don't see much difference, you're right. It's very hard to see any change in the development of the epidemic.

Researchers estimate that, all in all, the Wuhan travel ban only delayed the spread in China by 3–5 days.

Now what did researchers think the impact of reducing *transmission* would be?

Chart 21.c: Delay in Coronavirus Spread in China, Based on Travel Restrictions and Transmission Rate Reductions



Source: Tomas Pueyo analysis on charts and data from paper: The effect of travel restrictions on the spread of the 2019 novel coronavirus (COVID-19) outbreak, Science Magazine, https://science.sciencemag.org/content/early/2020/03/05/science.aba9757

The top bloc is the same as the one you've seen before. The two other blocks show decreasing transmission rates. If the transmission rate goes down by 25% (through Social Distancing), it flattens the curve and delays the peak by a whole 14 weeks. Lower the transition rate by 50%, and you can't see the epidemic even starting within a quarter.

The US administration's ban on European travel is good: It has probably bought us a few hours, maybe a day or two. But not more. It is not enough. It's containment when what's needed is mitigation.

Once there are hundreds or thousands of cases growing in the population, preventing more from coming, tracking the existing ones and isolating their contacts isn't enough anymore. The next level is mitigation.

Mitigation

Mitigation requires heavy social distancing. People need to stop hanging out to drop the transmission rate (R), from the R=~2–3 that the virus follows without measures, to below 1, so that it eventually dies out.

These measures require closing companies, shops, mass transit, schools, enforcing lockdowns… The worse your situation, the worse the social distancing. The earlier you impose heavy measures, the less time you need to keep them, the easier it is to identify brewing cases, and the fewer people get infected.

This is what Wuhan had to do. This is what Italy was forced to accept. Because when the virus is rampant, the only measure is to lock down all the infected areas to stop spreading it at once.

With thousands of official cases — and tens of thousands of true ones — this is what countries like Iran, France, Spain, Germany, Switzerland or the US need to do.

But they're not doing it.

Some business are working from home, which is fantastic.

Some mass events are being stopped.

Some affected areas are in quarantining themselves.

All these measures will slow down the virus. They will lower the transmission rate from 2.5 to 2.2, maybe 2. But they aren't enough to get us below 1 for a sustained period of time to stop the epidemic. And if we can't do that, we need to get it as close to 1 for as long as possible, to *flatten the curve.*

So the question becomes: What are the tradeoffs we could be making to lower the R? This is the menu that Italy has put in front of all of us:

- Nobody can enter or exit lockdown areas, unless there are proven family or work reasons.
- Movement inside the areas is to be avoided, unless they are justified for urgent personal or work reasons and can't be postponed.
- People with symptoms (respiratory infection and fever) are "highly recommended" to remain home.
- Standard time off for healthcare workers is suspended
- Closure of all educational establishments (schools, universities…), gyms, museums, ski stations, cultural and social centers, swimming pools, and theaters.
- Bars and restaurants have limited opening times from 6am to 6pm, with at least one meter (~3 feet) distance between people.
- All pubs and clubs must close.

- All commercial activity must keep a distance of one meter between customers. Those that can't make it happen must close. Temples can remain open as long as they can guarantee this distance.
- Family and friends hospital visits are limited
- Work meetings must be postponed. Work from home must be encouraged.
- All sports events and competitions, public or private, are canceled. Important events can be held under closed doors.

Then two days later, they added: *No, in fact, you need to close all businesses that aren't crucial. So now we're closing all commercial activities, offices, cafes and shops. Only transportation, pharmacies, groceries will remain open."*

One approach is to gradually increase measures. Unfortunately, that gives precious time for the virus to spread. If you want to be safe, do it Wuhan style. People might complain now, but they'll thank you later.

How Can Business Leaders Contribute to Social Distancing?

If you're a business leader and you want to know what you should do, the best resource for you is Staying Home Club.

Who's staying home because of COVID-19?
A list of all the companies WFH or events changed because of covid-19
stayinghome.club

It is a list of social distancing policies that have been enacted by US tech companies—so far, 328.

They range from allowed to required Work From Home, and restricted visits, travel, or events.

There are more things that every company must determine, such as what to do with hourly workers, whether to keep the office open or not, how to conduct interviews, what to do with the cafeterias... If you want to know how my company, Course Hero, handled some of these, along with a model announcement to your employees, here is the one my company used (view only version here).

4. When?

It is very possible that so far you've agreed with everything I've said, and were just wondering since the beginning when to make each decision. Put in another way, what triggers should we have for each measure.

Risk-Based Model for Triggers

To solve this, I've created a model (direct link to copy).

Coronavirus - When Should You Close Your Office?
How To Use Coronavirus Work From Home Model This model should help you and your company make a decision on whether you...
docs.google.com

It enables you to assess the likely number of cases in your area, the probability that your employees are already infected, how that evolves over time, and how that should tell you whether to remain open.

It tells us things like:

- If your company had 100 employees in the Washington state area, which had 11 coronavirus deaths on 3/8, there was a 25% chance at least one of your employees was infected, and you should have closed immediately.
- If your company had 250 employees mostly in the South Bay (San Mateo and Santa Clara counties, which together had 22 official cases on 3/8 and the true number was probably at least 54), by 3/9 you would have had ~2% chances to have at least one employee infected, and you should have closed your office too.
- *[Updated as of 3/12]* If your company is in Paris (intramuros), and it has 250 employees, today there's a **95% chance that one of your employees has the coronavirus**, and you should close your office by tomorrow.

The model uses labels such as "company" and "employee", but the same model can be used for anything else: schools, mass transit... So if you have only 50 employees in Paris, but all of them are going to take the train, coming across thousands of other people, suddenly the likelihood that at least one of them will get infected is much higher and you should close your office immediately.

If you're still hesitating because nobody is showing symptoms, just realize 26% of contagions happen before there are symptoms.

Are You Part of a Group of Leaders?

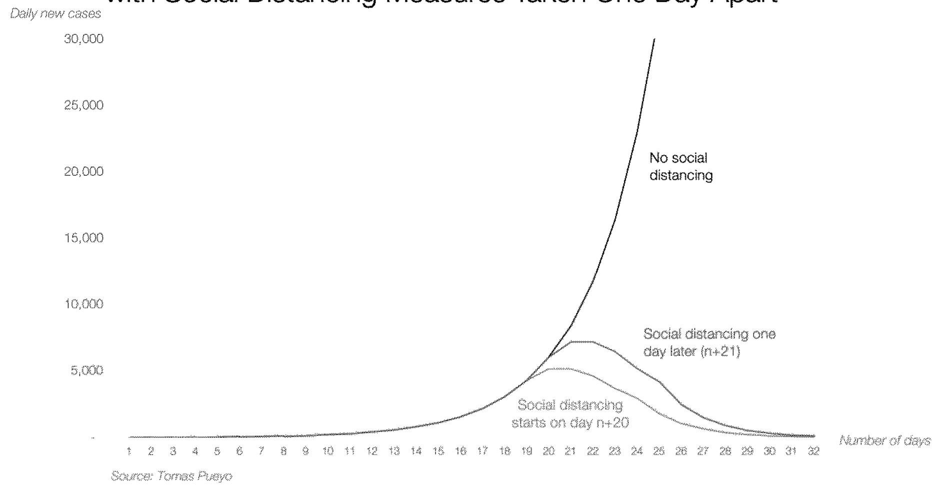
This math is selfish. It looks at every company's risk individually, taking as much risk as we want until the inevitable hammer of the coronavirus closes our offices.

But if you're part of a league of business leaders or politicians, your calculations are not for just one company, but for the whole. The math becomes: What's the likelihood that any of our companies is infected? If you're a group of 50 companies of 250 employees on average, in the SF Bay Area, there's a 35% chance that at least one of the companies has an employee infected, and 97% chance that will be true next week. I added a tab in the model to play with that.

Conclusion: The Cost of Waiting

It might feel scary to make a decision today, but you shouldn't think about it this way.

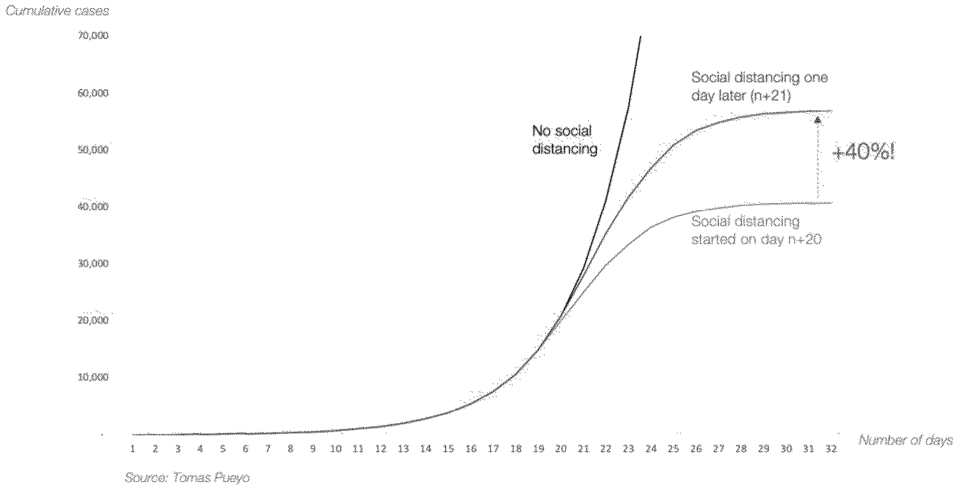
Chart 22: Model of Daily New Cases of Coronavirus with Social Distancing Measures Taken One Day Apart



This theoretical model shows different communities: one doesn't take social distancing measures, one takes them on Day n of an outbreak, the other one on Day n+1. All the numbers are completely fictitious (I chose them to resemble what happened in Hubei, with ~6k daily new cases at the worst). They're just there to illustrate how important a single day can be in something that grows exponentially. You can see that the one-day delay peaks later and higher, but then daily cases converge to zero.

But what about cumulative cases?

Chart 23: Model of Cumulative Cases of Coronavirus with Social Distancing Measures Taken One Day Apart



In this theoretical model that resembles loosely Hubei, waiting one more day creates 40% more cases! So, maybe, if the Hubei authorities had declared the lockdown on 1/22 instead of 1/23, they might have reduced the number of cases by a staggering 20k.

And remember, these are just cases. Mortality would be much higher, because not only would there be directly 40% more deaths. There would also be a much higher collapse of the healthcare system, leading to a mortality rate up to 10x higher as we saw before. So a one-day difference in social distancing measures can end exploding the number of deaths in your community by multiplying more cases and higher fatality rate.

This is an exponential threat. Every day counts. When you're delaying by a single day a decision, you're not contributing to a few cases maybe. There are probably hundreds or thousands of cases in your community already. Every day that there isn't social distancing, these cases grow exponentially.

Share the Word

This is probably the one time in the last decade that sharing an article might save lives. They need to understand this to avert a catastrophe. The moment to act is now.

https://medium.com/@tomaspueyo/coronavirus-act-today-or-people-will-die-f4d3d9cd99ca

Message

From: Dr. Eva K Lee
Sent: 3/17/2020 1:52:08 PM
To: Richard Tubb
CC: Brian Benson McDonald, Eric [Eric.McDonald@sdcounty.ca.gov]; Carter Mecher Rob Darling, MD [rdarling@patronusmedical.com]; William Lang [wlang@worldclinic.com]; Caneva, Duane [duane.caneva@hq.dhs.gov]; Mecher, Carter [Carter.Mecher@va.gov]; Tom Bossert Richard Hatchett [richard.hatchett@cepi.net]; Lawler, James V [james.lawler@unmc.edu]; Parker Jr, Gerald W [gparker@cvm.tamu.edu]; Hanfling, Dan [DHanfling@iqt.org]; Gruber,David (DSHS) [David.Gruber@dshs.texas.gov]; Dr. Eva Lee CHRISTOPHER ALLEN Borio, Luciana [LBorio@iqt.org]; Tracey McNamara [tmcNamara@westernu.edu]; Baric, Ralph S [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bb0d9cc80c184735a4e862c3bdd8a15d-Ralph S Bar]; Hunt, Richard (OS/ASPR/EMMO) [Richard.Hunt@hhs.gov]; WILKINSON, THOMAS [THOMAS.WILKINSON@hq.dhs.gov]; M.D. [MVCALLAHAN@mgh.harvard.edu]; David [DMarcozzi@som.umaryland.edu]; CharitytA@CDPH [Charity.Dean@cdph.ca.gov]; Gregory J [MartinGJ@state.gov]; Walters, William (STATE.GOV) [walterswa2@state.gov]; HAMILTON, CAMERON [cameron.hamilton@hq.dhs.gov]; Dodgen,tDanielt(OS/ASPR/SPPR) [daniel.dodgen@hhs.gov]; DeBord,Kristin (OS/ASPR/SPPR) [Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR) [Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA) [matthew.j.hepburn.civ@mail.mil]; Lisa Koonin [HARVEY, MELISSA [melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT [HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander [alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED [mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) [Robert.Johnson@hhs.gov]; Yeskey, Kevin [kevin.yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA) [Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR) [John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO) [David.Hassell@hhs.gov]; Hamel, Joseph (OS/ASPR/IO) [Joseph.Hamel@hhs.gov]; Wade, David [david.wade@hq.dhs.gov]; TARANTINO, DAVID A [david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA [sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO) [Scott.Lee@hhs.gov]; Larry G [PadgetLG@state.gov]; Ryan Morhard [Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH) [steven.stack@ky.gov]; Adams, Jerome (HHS/OASH) [Jerome.Adams@hhs.gov]; Mansoura, Monique K. [mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV) [jessica.fantinato@usda.gov]; DC [michelle.colby@usda.gov]; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) [jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J. [jschnitzer@mitre.org]; Ignacio, Joselito [joselito.ignacio@fema.dhs.gov]; Will Gaskins [will.gaskins@efiia.com]; Kevin Montgomery [kevin@collaborate.org]; Logan, Linda L [llogan@cvm.tamu.edu]; LLogandakar Venkayya, Rajeev [rajeev.venkayya@takeda.com]; Ronny Jackson MothersheadtJerry L.

Subject: Re: [EXTERNAL] Re: Red Dawn Raging Start March 4

- Quarantine, tracking and contact tracing
This remains very critical as we try to catch those infected, qurantine or treat to minimize spread and death. One thing Asian countries have been using are electronic tracking like those Disney armbands. It can be very effective knowing the quarantined person where he/she has gone. This may be useful as you see in the news a quarantined man refused to be quarantined and they have to put police guards around his house. That is too resource intensive to monitor one individual. I think we need a good message and good way of tracking them, if they do venture outside. Or make it a fine like in Singapore so people will be penaltzed if they violate the quarantine requirement.

- Asian countries are witnessing a new wave -- this is the cyclic effect of western infecting the easten, going around in a circle. But we are all in it togeher now.

Singapore, Taiwan and Hong Kong are witnessing fresh waves of coronavirus infections, as the growing number of cases around the world test their successful early defenses against the disease.[[From Wall Street Journal.

- **Military cops -** I think this is really the last resort. We should not mobilize it now. We ought to use all community resources. Many businesses are idled - hotels, scheme partks, etc, so we can gather some of those resources for space and if needed for logistics help.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Tuesday, March 17, 2020 1:13 PM, Dr. Eva K Lee wrote:

Good point, I would stay away from Cruise, but hotels are good for :

1. Mandatory Quarantine -- I believe California governor has mentioned he will seize hotels to do just that. This is important since we don't have buildings as in Hong Kong for all these mandatory quarantine.

2. Treatment of mild symtom patients -- It may be possible to set them up like urgent care centers. Could be very useful.

I know some hotels do have good santization and they can provide us the much needed space. Now it is the hospital equipment and care team that we need to supply. I know some of yoiu here are medical corps who can go to disaster areas on the fly. I don't know how many there are such medical personnel available but there is a list of those indviduals who can become available.

3. At some point, we need patient transfer to help treat the severely sick patients.

evalee-gatech@pm.me
https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Tuesday, March 17, 2020 1:06 PM, Richard Tubb <bg wrote:

For isolation/quarantine of test positive, but minimally ill people, and expansion of hospital care to mild to moderate lately ill patients, has there been any thought to using the excess capacity that hotels and cruise lines will undoubtedly have (thereby stemming some of their bleeding)? I think we briefly looked at that in earlier pandemic planning (and Katrina?)

Sent from my iPad

On Mar 16, 2020, at 11:00 PM, Dr. Eva K Lee wrote:

CPR: In my calculations, the mortality of covid-19 is 10-30 times higher than flu. It's hard to compare because so little is known about the asymptomatic population. I found it curiously interesting --

Relative CFR of China = 3.989%,
Relative CFR of outside China = 3.875%
Relative CFR of the World = 3.925%

Community screening and testing: the doctors here can tell you their repsective hospitals and experience. I can only relay to you that NYP announced Sunday morning that they do not have test kits to test their healthcare workers and they need enough tests kits to do that. It is always our desire even back in late January to sample community so that we can catch patients with or without sypmptoms. I don't know if we have sufficient kits now to do that. I hope so.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Monday, March 16, 2020 10:44 PM, Brian Benson wrote:

S/w Germano this AM asking if things were better. He said not improvement yet. Assuming there are a certain number of deaths in non flu season (natural causes) and an uptick during flu season, I was curious if the total death rate was the equivalent of having two influenza occurring simultaneously. He said they lost 7 at his hospital yesterday and 3 more at the nearby facilities (Ancona, Italy). He thinks it's worse than having two flu going on. Do we have enough test kits to sample symptomatic and asymptomatic folks to get a feel for the true infection rate in a limited area? Has any one hospital start screening staff q48h or so?

On Mar 16, 2020, at 8:30 PM, Dr. Eva K Lee wrote:

Thanks. I will incorporate your intervention.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Monday, March 16, 2020 9:03 PM, McDonald, Eric <Eric.McDonald@sdcounty.ca.gov> wrote:

Here's what we did:

Good evening community partners,

The County of San Diego Health and Human Services Agency issued amended orders in response to the ongoing COVID-19 emergency. Effective midnight on Tuesday, March 17, 2020, the Health Officer Orders in part:

- All events with 50 or more people in a single space at the same time, regardless of whether it occurs indoors or outdoors, are prohibited. All non-essential gatherings of any size are strongly discouraged.
- All businesses that serve alcohol and do not serve food shall close.
- All restaurants and business establishments that serve food shall close all on-site dining. All food served shall be by delivery, pick-up, or drive-thru.
- All businesses shall enact social distancing, increased sanitation standards, and shall make every effort to use telecommuting for its workforce.
- Schools shall not hold classes or other activities where students gather on the school campus.
- A strong recommendation is made that all persons who are 65 years old or older, have a chronic underlying condition, or have a compromised immune system self-quarantine themselves at home.
- All persons arriving in the country from CDC Warning Level 3 Travel Advisory locations shall be subject to a 14-day home quarantine and self-monitoring.

The full Public Health Order is available **here**. This order shall be reevaluated and extended if appropriate on or before March 31, 2020.

If you have individual questions, please talk to your healthcare provider. For community resources, please call 2-1-1 San Diego or visit **www.coronavirus-sd.com**.

Sent from my iPhone

On Mar 16, 2020, at 6:00 PM, Brian Benson wrote:

Cousin in San Diego said all public building closed all schools closed all bars and restraints and basically saying shelter in place for three weeks.

On Mar 16, 2020, at 7:42 PM, Dr. Eva K Lee wrote:

Oh dear! Yes wll share. I have just incorporated various items into it, including school closure, tele-work ett, plus search in beds etc. Many counties have asked me to run specific to their sites. It takes a while. I am asking GT to let me use all my machines so that I can run many simultaenously.

Let me look up San Diego's number of students enrolled in schools and number of workers. If you have them handy, please send me those also. And you have closed schools yet, or not?

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Monday, March 16, 2020 8:37 PM, McDonald, Eric <Eric.McDonald@sdcounty.ca.gov> wrote:

Very much want to see that run! San Diego has 3.3 million people and we are now at 47 resident cases...happy coincidence!

Sent from my iPhone

On Mar 16, 2020, at 5:33 PM, Dr. Eva K Lee wrote:

Thanks Carter. I have built a county of 3.3 million and generate the results starting with 30 infected individuals. I am running it now and will send the results so we can see the healthcare burden and how beds are critical when demands for hospital care increases. I remain convince that the medical tents -- as an appendice to the main hospitals can be very useful and critical in our treatment of covid-19 patients. Healthcare workers remain critical to be protected. Operators too have to be protected as I mentioned that back in January. We have many fire now, and we are going to run short of many essential personnel (plus equipment) because they are either being quarantined or being infected. Either case is not good for us. We need tele-medicine so these workerss can remain useful for patient care. Medical students are essential for surges hence it is good for them to be off and be protected.

Regarding quarantine, it is good to isolate infected personnel from his/her own family so that not everyone in the family is cross-infected. Strict guidelines must be offered and advised to the patients. I mention this because last night some patients asked me what isolation vs quarantine mean. I explain it to them, luckily I have the exact guidelines from the hospitals that are used for employees. I think we need some education.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Monday, March 16, 2020 7:56 PM, Carter Mecher wrote:

Given that seniors are particularly vulnerable, below is information that might prove useful as we develop strategies to safeguard this high-risk group.

Data on senior households:

US population age 65+ 49 M (15%)

- Total US Households 121.6 M
  - Total Senior Households 30.6 M
    - 1 person household 13 M
    - Couple Household Married 13.4 M
    - Couple Household Unmarried 0.6 M
    - 2 or more non-relatives 2.1 M
    - With children 1.3 M

Senior population by state https://www.census.gov/library/stories/2018/10/snapshot-fast-growing-us-older-population.html

<38BD288F432847FBAE4AEF2D828A40F6.png>

Information re computer access for seniors in their homes:
https://www.census.gov/library/stories/2018/10/snapshot-fast-growing-us-older-population.html

<5B1F28D9F77D475BB96B8D02D5C3803A.jpg>

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Monday, March 16, 2020 5:13 PM
To: Richard Tubb
Cc: Rob Darling, MD; William Lang; Caneva, Duane; Mecher, Carter; Tom Bossert; Richard Hatchett; Carter Mecher; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); Dr. Eva Lee; CHRISTOPHER ALLEN; [redacted] McDonald, Eric; Borio, Luciana; Brian Benson; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Mothershead Jerry L.
Subject: Re: [EXTERNAL] Re: Red Dawn Raging Start March 4

Trump just announced that there should be no gathering of more than 10 people for the next 15 days. It is expected that the judges of the Northern District of Georgia will close the courthouse for the next 15 days.

I assume this time it must include sschools.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Monday, March 16, 2020 4:16 PM, Richard Tubb <bg.richard. wrote:

Any thoughts on passive immunization with IVIG?

Sent from my iPad

On Mar 16, 2020, at 3:52 PM, Richard Tubb wrote:
That said, listening to the President's briefing at this moment, having chosen a strategy, I say we need to be onboard 100%.

Sent from my iPad

On Mar 16, 2020, at 1:42 PM, Rob Darling, MD <rdarling@patronusmedical.com> wrote:
I support that 100% Dick. Thank you for sharing those thoughtful words about our elderly.

Rob

Sent from my iPhone

Robert G. Darling, MD, FACEP
Founder, Chief Medical Officer
Patronus Medical
WWW.PatronusMedical.com

Mobile:
Fax:

On Mar 16, 2020, at 13:37, Richard Tubb <bg.richard. wrote:

Another question asked at a breakfast forum last week (that seems to be the UK position)...

The President should go back to a place in time where we not only protected, but also respected, revered, and protected our elders. For a Country (or for a part of the a Country) who appears to care so much about what the

rest of the world thinks of us, we are almost alone in the world and in history in our lack of respect and value of our elders. Instead we mock them in the media, hide them from society, warehouse them until they die, and help them if they don't die fast enough. Instead, as we became a culture of celebrity, and a culture of death, we have also come to worship youth—at times to comic proportions.

I have long thought that if the President and Vice President should publicly embrace and esteem the elderly as not just our legacy, but also as the key to our present and future success as a people. They would not only be doing the right and intelligent thing, they would also be doing the politically smart thing.

COVID-19 provides the ideal place to start. It is the elderly who are the most vulnerable to this virus. They are probably the most likely to comply with self quarantining. (On the other hand, the youth are probably th least likely to comply with self quarantine, and to a certain extent drive the economy). As has correctly been pointed out, COVID will inevitably run its course through the youth without much damage. On the other side of the crisis, the youth will also produce the herd immunity necessary to then protect the vulnerable, including the elderly. (Note that it is also the youth who often provide care for the aged, in either situation.)

Until then, and until vaccines and antivirals are available, our focus should be on protecting the aged.

It's the right thing to do.

Sent from my iPad

On Mar 16, 2020, at 10:59 AM, William Lang <wlang@worldclinic.com> wrote:

Bill Lang here (Dir of WH Med during Bush admin, then Assoc Ch Med Officer at DHS with Jeff Runge).

A question about skin sanitizers. We all know that alcohol isn't adequate the way most people use it (use too little and evaporates too fast). There are a number of other sanitizers out there (e.g., MicroSan, Touch Germ Block, etc.) that are not formally approved, but have good data. Many of them have residual microbicidal capabilities on skin of 2 to as long as 6 hours. Would it not make sense to apply those around face (carefully) also as a second line of defense, perhaps even more effectively since the infectious particle density is already reduced from whatever people have done to their hands (especially since not washing face often, so not washing off the microbicide).

Thanks-

-Bill

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 7:55 AM

To: Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Carter Mecher Dr. Eva K Lee Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan

<DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee <eva.evalee.lee64@ CHRISTOPHER ALLEN McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Borio, Luciana <LBorio@iqt.org>; Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; 'Richard Tubb' <bg.richard William Lang <wlang@worldclinic.com>; rdarling@patronusmedical.com; Ronny Jackson <ronny.j

Subject: RE: [EXTERNAL] Re: Red Dawn Raging Start March 4

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Sorry for spam.

Housecleaning. Let me know if you want your name removed.

From: Mecher, Carter <Carter.Mecher@va.gov>

Sent: Monday, March 16, 2020 5:42 AM

To: Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>

Cc: Subject: RE: [EXTERNAL] Re: Red Dawn Raging Start March 4

It doesn’t matter. Anyone with common sense (governors) as well as the public will interpret this to practically mean school closure. That CDC would not want 50 people being together for even an hour while hundreds or thousands of kids could be together for 8 hours defies common sense. Imagine CDC getting on TV and trying to explain. Good luck with that.

Sent with BlackBerry Work
(www.blackberry.com)

From: Tom Bossert

Date: Monday, Mar 16, 2020, 12:32 AM

To: Richard Hatchett <richard.hatchett@cepi.net>

Cc: Carter Mecher <cmecher@charter.net>, Dr. Eva K Lee <evalee-gatech@pm.me>, Lawler, James V <james.lawler@unmc.edu>, Parker Jr, Gerald W <gparker@cvm.tamu.edu>, rjglassjr@gmail.com <rjglassjr@gmail.com>, Caneva, Duane <duane.caneva@hq.dhs.gov>, Hanfling, Dan <DHanfling@iqt.org>, Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>, Dr. Eva Lee CHRISTOPHER ALLEN <chrisallen McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>, Borio, Luciana <LBorio@iqt.org>, Brian Benson Tracey McNamara <tmcNamara@westernu.edu>, Baric, Ralph S <rbaric@email.unc.edu>, Mecher, Carter <Carter.Mecher@va.gov>, Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>, WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>, M.D. <MVCALLAHAN@mgh.harvard.edu>, David <DMarcozzi@som.umaryland.edu>, Charity A@CDPH <Charity.Dean@cdph.ca.gov>, Gregory J <MartinGJ@state.gov>, Walters, William (STATE.GOV) <walterswa2@state.gov>, HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>, Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>, DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>, Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>, Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>, WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>, Eastman, Alexander <alexander.eastman@hq.dhs.gov>, EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>, jwleduc@utmb.edu <jwleduc@utmb.edu>, Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>, Yeskey, Kevin <kevin.yeskey@hhs.gov>, Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>, Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>, Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>, Wade, David <david.wade@hq.dhs.gov>, TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>, KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>, Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>, Larry G <PadgetLG@state.gov>, Ryan Morhard <Ryan.Morhard@weforum.org>, Steven Jt(tCHFStDPH) <steven.stack@ky.gov>, Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>, Mansoura, Monique K. <mmansoura@mitre.org>, Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>, DC <michelle.colby@usda.gov>, danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>, Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>, Schnitzer, Jay J. <jschnitzer@mitre.org>, Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>, Will Gaskins <will.gaskins@efiia.com>, Kevin Montgomery <kevin@collaborate.org>, Logan, Linda L <llogan@cvm.tamu.edu>, LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>

Subject: [EXTERNAL] Re: Red Dawn Raging Start March 4

No, it expressly excludes them, frustratingly:

CDC guidance as of 3/15/2020

Large events and mass gatherings can contribute to the spread of COVID-19 in the United States via travelers who attend these events and introduce the virus to new communities. Examples of large events and mass gatherings include conferences, festivals, parades, concerts, sporting events, weddings, and other types of assemblies. These events can be planned not only by organizations and communities but also by individuals.

Therefore, CDC, in accordance with its guidance for large events and mass gatherings, recommends that for the next 8 weeks, organizers (whether groups or individuals) cancel or postpone in-person events that consist of 50 people or more throughout the United States.

Events of any size should only be continued if they can be carried out with adherence to guidelines for protecting vulnerable populations, hand hygiene, and social distancing. When feasible, organizers could modify events to be virtual.

This recommendation does not apply to the day to day operation of organizations such as schools, institutes of higher learning, or businesses. This recommendation is made in an attempt to reduce introduction of the virus into new communities and to slow the spread of infection in communities already affected by the virus. This recommendation is not intended to supersede the advice of local public health officials.

-Tom

On Mar 16, 2020, at 12:01 AM, Richard Hatchett <richard.hatchett@cepi.net> wrote:

Does that include schools?

Sent from my iPhone

On 16 Mar 2020, at 00:32, Carter Mecher wrote:

CDC now recommends that, for the next 8 weeks, events with more than 50 people are canceled throughout the U.S.

<A81F4842CAAA4B60AB38AA1790253913.png>

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Sunday, March 15, 2020 4:46 PM
To: Tom Bossert
Cc: Lawler, James V; Parker Jr, Gerald W; Caneva, Duane; Hanfling, Dan; Gruber,David (DSHS); Dr. Eva Lee; CHRISTOPHER ALLEN; Richard Hatchett; McDonald, Eric; Borio, Luciana; Brian Benson; Tracey McNamara; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; rajeev.venkayya@takeda.com
Subject: Re: Red Dawn Raging Start March 4

Thank you. The total infection and death outsifde China now surpass those of China's infection and deaths.

evalee-gatech@pm.me
https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Sunday, March 15, 2020 4:23 PM, Tom Bossert wrote:

I just posted another piece. Nothing new in it to this team, but it reflects my view of the situation.

https://abcnews.go.com/Health/coronavirus-paradox-lowest-point-finest-hour-opinion/story?id=69602027

-Tom

On Mar 14, 2020, at 3:55 PM, wrote:

Vincent Covello shared Q&As he developed with ASTHO on COVID/

https://www.astho.org/COVID-19/Q-and-A/

He uses a technique called message maps. He has a rule 3/9/27--convey 3 points, in 9 seconds, and 27 words. Perfect size for the media.

Might be useful for those of you from state and local public health as well as from healthcare systems.

From: Vincent Covello <vincentcovello@yahoo.com>
Date: Saturday, Mar 14, 2020, 10:14 AM
To: Mecher, Carter <Carter.Mecher@va.gov>
Subject: [EXTERNAL] Follow up: COVID-19 document

Hi Carter,

I have provided below the url for a COVID-19 document that I co-authored and that was published today by ASTHO on their website.

The document contains message maps for questions addressed to US State and Territorial Health Directors. This first batch of 45+ questions came directly last week from the Health Directors.

I co-authored a similar document on ZIKA for ASTHO a few years ago. My understanding is ASTHO received a surge of download requests for the ZIKA document on the first day of publication. Many of the requests came from reporters. They liked the short and long answer format of the message map.

As you might imagine, the contents of the document will be a moving target. The questions and the mapped answers will be updated frequently. For example, we have at least ten new questions based on the events of just the last few days.

Please feel free to share this document with others. I and my team members would also greatly welcome your comments or suggestions.

Best regards,

Vincent

Dr. Vincent Covello

Director

Center for Risk Communication

Tel.: Email:

https://www.astho.org/COVID-19/Q-and-A/

From: "Dr. Eva K Lee"

To: James V"

Cc: "Carter Mecher", Gerald W", Duane", "Tom Bossert", Dan",David (DSHS)", "Dr. Eva Lee", "CHRISTOPHER ALLEN", "Richard Hatchett", Eric", Luciana", "Brian Benson", "Tracey McNamara", Ralph S", Carter (VA.GOV)", Richard (OS/ASPR/EMMO)", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV)", CAMERON",tDanielt(OS/ASPR/SPPR)",Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", David", DAVID A", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV)", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "Kevin Montgomery", Linda L", "LLogandakar", "rajeev.venkayya@takeda.com"

Sent: Saturday March 14 2020 12:44:37PM

Subject: Re: Red Dawn Raging Start March 4

This is so very sad, yes, everything we talked about and everything we have anticipated. Yes, you can see from the curves in the graphs when they have the first confirmed death, they're **at least 2 weeks behind.** I don't understand the screening at the airport, not even a little advice on self-quarantine coming in from any countries. Yes, children will die too if they have no support in the hospitals. There are many with co-existing conditions. Beds are critical. That is all I am counting (when we have one bed, we need everything that goes with it in the support). Healthcare workers and anyone in service to assist this covid-19 operations must stay healthy. But of course we know they will be quarantined at some stage. I know people may think school closure is over-reacting. It isn not if you think about the inter-dependencies. **You can imagine a million different scenarios. Just a simply one** -- a litle child got infected from school. He came home and infected his mother who was a nurse. The nurse went to work without any noticeable symptoms, and she infected the ICU patients that she cared for. Ok, this is one case -- and again -- one case is ALL we need to worry about. The cascading effect -- we don't want to even think about.

But as a country, we must fight for everyone and every state. I truly believe and in my calculations, those states that took the pre-emptive steps -- they are going to have the resources to contain their own infection and at some point, can help those states in needs. Here we go about sending patients around -- not 7 -- but many -- when we must lend the help when needed (and if we could do so at all). Now, everyone is fighting their local fire, and it's already quite stressful for everyone. I don't even know if anyone has extra resources. It is really resource-intense. Can you imagine --India, and the African countries start to pick up? It frightens me. Hence pre-emptive is a must.

evalee-gatech@pm.me

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Saturday, March 14, 2020 10:25 AM, Lawler, James V <james.lawler@unmc.edu> wrote:

From a friend of a med school classmate on Facebook (so caveat as you will)

“MT: So if you're not here in Kirkland Washington, let me give you an update on our not so little town.

Our local hospital, Evergreen, one of the top-ranked hospitals in the country and literally at ground zero in the fight against Coronavirus has run out of beds as of today. The staff is exhausted, demoralized, and supplies are running low.

Because so many staff members are sick, and the operational tempo is so high, medical staff told to be in quarantine due to exposure, but not showing symptoms have been summoned back to work. So far 65 patients have entered the hospital positive for COVID-19, 15 didn't leave alive (as of 3/10).

Tom Douglas, multiple James Beard Award winner is closing down 12 of his 13 restaurants (only leaving one open because of a contract with a hotel) because business is down 90%.

Boeing, which was a hot mess with the 737-MAX issue, to begin with, is now losing more orders than it is getting as the airline industry braces for a 70% reduction in air travel. At the basement of 9/11, global air travel was off 40%.

Norweigan Cruiselines, headquartered in Seattle, has been called out for lying to customers about the safety of their ships, their capacity to protect passengers and making it difficult to cancel or reschedule trips.

Starbucks has announced they will be limited seating in their stores and ones with drive-thru will go drive-thru only.

The Seattle Mariners have moved their home openers out of the area, for now, my guess is the MLB will follow every other sports league and suspend the start of baseball.

Our school district has suspended classes until March 27, but my guess is it will go longer. Issaquah, a town nearby has suspended classes until April 24.

I was in our nearest grocery store, which is a flagship "Fred Meyer" store (Kroger corp) and all of the staples aisles were close to empty. Beans, rice, flour, pasta. Beans about wiped out, the only rice I could find was a 5-pound bag in the Asian section. Only the high-end "boutique" pasta and a few more complex dish pasta like lasagna noodles. The Jewish section had some noodles in it, and the Asian section still had some ramen.

There is no traffic. There is an eerie quiet in the air, and although the videos of people racing in Costco are entertaining, I have not seen anyone running in a store to the TP, fights over food, or other resources. There is this strange calm, but I always remind myself that history has shown we are three hot meals and a warm bed away from wanting to kill each other.

My wife has shared some other stories from her work - nothing sinister or ominous but nothing I can share and nothing that even if I could, I feel ready to share.

We no longer hear about Life Care Center. The federal government finally showed up there and now all news has stopped. The 70+ employees who are all in various states of being sick are still not tested - that we know. One-third of our town fire department is now in quarantine. If there is anything that gives me the creeps it is this. The government showed up and the news stopped.

When we returned from our trip to Africa on 2/26 and went through Customs in Seattle, there was no screening, no questions, no testing, no sorting of passengers. Nothing. Welcome back, stamp of the passport, done. The lines weren't long and the lack of any form of screening at this Asian gateway was disconcerting. It paled in comparison to the strict protocols we went through in Windhoek and Johannesburg, and the announcements and questions in Frankfurt. What we didn't know at that time is from 2/19 to 2/25, 12 patients had died at Life Care Center for unknown reasons, and the first COVID-19 death was on 2/26.

The response to the threat at a federal level was non-existent.

My opinion.

The Seattle area is about two weeks ahead of most of the United States. For those going this is just hype and this is just the flu, come fly here and see for yourself. I mean flights are cheap and planes are empty. Can even offer you a place to sleep.(no not really, but Kirkland has plenty of hotels)

The Seattle area is probably 2 to 3 weeks behind Iran or Italy at this point. The tidal wave is coming, I believe most in the general public are just in denial about it at this point.

In Italy Coronavirus is killing young and old alike because once you run out of beds, once you run out of breathing machines, Coronavirus becomes an equal opportunity killer. You get pneumonia, your lungs fill up, you basically drown.

When you can get advanced care, your survival odds are very good. Once that system falls apart, it is first come first serve, and how healthy are you. A lot of younger Americans are very unhealthy with multiple comorbidity factors.

Evergreen Hospital ran out of beds today.

Winter is coming."

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation
Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center
m:
james.lawler@unmc.edu

<2C4EE4AF32384D10986ED17D25126D99.png>

From: Carter Mecher
Sent: Saturday, March 14, 2020 4:32:54 PM
To: Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Dr. Eva K Lee

Cc: Lawler, James V <james.lawler@unmc.edu>; Caneva, Duane <duane.caneva@hq.dhs.gov>; Tom Bossert Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee <eva.evalee. CHRISTOPHER ALLEN <chrisallen_1 Richard Hatchett <richard.hatchett@cepi.net>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Borio, Luciana <LBorio@iqt.org>; Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar <llogandakar@ rajeev.venkayya@takeda.com <rajeev.venkayya@takeda.com>
Subject: RE: Red Dawn Raging Start March 4

Non-UNMC email

Is anyone at CDC monitoring ILI?

Here is the latest flu surveillance for Hong Kong, South Korea, US; the states of CA, OR, WA, TX; and the cities of Seattle, NYC, and Chicago (LA hasn't reported week 10 yet).

Why did the US ILI curve deflect up this week, while influenza positive tests are tracing down? Seeing the same wrt ILI increasing in WA, OR, Seattle, Chicago, and NYC. Is this influenza A, COVID, or both? Chicago and NYC are concerning because their influenza virus detection is going down and ILI is going up.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Saturday, March 14, 2020 7:58 AM

To: Parker Jr, Gerald W; Dr. Eva K Lee; rjglassjr@gmail.com

Cc: Lawler, James V; Caneva, Duane; Tom Bossert; Hanfling, Dan; Gruber,David (DSHS); Dr. Eva Lee; CHRISTOPHER ALLEN; jamison. Richard Hatchett; McDonald, Eric; Borio, Luciana; Brian Benson; Tracey McNamara; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; rajeev.venkayya@takeda.com

Subject: RE: Red Dawn Raging Start March 4

Most of you have been involved in table top exercises of an outbreak. In those exercises they commonly show a map of the US with the number of cases noted and extent of spread. At various points in the scenario, a facilitator will ask the participants what actions should be taken. I took the graphic of the US map from the NYTimes and created a PowerPoint movie from Mar 4 (the first day that the NYTimes presented that map) through today.

In this scenario, the facilitator pauses now on March 14. At this point the virus has already spread to more than 120 countries. The virus is highly transmissible with an Ro of about 2.5 and has a CFR of 0.5%-1.0%. The elderly and those with chronic medical conditions are at greatest risk. The response has been hindered by serious delays in the ability to confirm disease with diagnostic testing. This testing capacity is limited. Case ascertainment is limited due to the testing constraints. It is believed that over the next two weeks capacity for testing should improve. However, the demand for testing is anticipated to increase exponentially over the next 2 weeks. A few areas in the US have been particularly hard hit—Washington and California. The current US case count is 2,654 with 49 deaths. What actions would you take on March 14?

Sent from Mail [go.microsoft.com] for Windows 10

From: Parker Jr, Gerald W

Sent: Saturday, March 14, 2020 12:49 AM

To: Carter Mecher; Dr. Eva K Lee;

Cc: Lawler, James V; Caneva, Duane; Tom Bossert; Hanfling, Dan; Gruber,David (DSHS); Dr. Eva Lee; CHRISTOPHER ALLEN; jamison.day@gmail.com; Richard Hatchett; McDonald, Eric; Borio, Luciana; Brian Benson; Tracey McNamara; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; rajeev.venkayya@takeda.com
Subject: Re: Red Dawn Raging Start March 4

Carter, thank you for the excellent analysis... I totally agree. I am sure that we will start seeing second guessing because of the politico article and the CDC guidance. I know that I will need to start preparing a response to authorities in Texas and in my university. your analysis is very helpful.

Keep up the good fight!!

Gerry Parker

From: Carter Mecher <cmecher@charter.net>
Sent: Friday, March 13, 2020 7:13:19 PM
To: Dr. Eva K Lee; rjglassjr@gmail.com
Cc: Lawler, James V; Parker Jr, Gerald W; Caneva, Duane; Tom Bossert; Hanfling, Dan; Gruber,David (DSHS); Dr. Eva Lee; CHRISTOPHER ALLEN; Richard Hatchett; McDonald, Eric; Borio, Luciana; Brian Benson; Tracey McNamara; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; rajeev.venkayya@takeda.com
Subject: RE: Red Dawn Raging Start March 4

I don't think the intent is to close schools for only 2 weeks. Longer term school closure will be necessary.

What CDC is not accounting for is that we have been flying blind for weeks with essentially no surveillance. This was due to the delays associated with the diagnostic test developed by CDC and the very narrow CDC definition of a PUI that really hampered our ability to even identify community transmission. We have raised this concern repeatedly. Our general sense was that community transmission was already occurring

several weeks ago (and we stated so at the time over email and on conference calls), but nobody could prove it because CDC would only perform confirmatory testing on cases meeting the PUI definition. And the PUI criteria by definition excluded any potential case of community transmission. It was very circular. CDC placed state and local public health in a bit of a Catch 22.

So after a long delay we finally have the ability to test more broadly. If you recall, CDC only expanded the PUI incrementally at first to include severely ill patients with no travel hx or link to a known case. It was only later that testing was opened up more broadly. Can a model incorporate that amount of confusion into the initial conditions?

Once testing began in earnest, the numbers of cases exploded. It was like popcorn (also as we predicted). Cases were appearing everywhere. I would challenge anyone to provide an accurate estimate of prevalence in the US. I'd be interested in how certain they would be of that estimate +/-?

The difference between models and real life is that with models we can set the parameters. How would they model what happened in Italy? On Feb 20, they had 3 cases and no deaths. This is what happened since:

Italy			
Date	Cum Deaths	Cum Confirmed	Critical Condition (ICU)
30-Jan	0	2	
31-Jan	0	2	
7-Feb	0	3	
20-Feb	0	3	2
21-Feb	1	20	6
22-Feb	2	63	7
23-Feb	3	155	26
24-Feb	7	229	23
25-Feb	11	322	19
26-Feb	12	453	
27-Feb	17	655	
28-Feb	21	889	64
29-Feb	29	1,128	105
1-Mar	34	1,694	140
2-Mar	52	2,036	166

3-Mar	79	2,502	
4-Mar	107	3,089	295
5-Mar	148	3,858	351
6-Mar	197	4,636	462
7-Mar	233	5,833	567
8-Mar	366	7,375	650
9-Mar	463	9,172	733
10-Mar	631	10,149	877
11-Mar	827	12,264	1,028
12-Mar	1,016	15,113	1,153
13-Mar	1,266	17,660	1,328

The difference between models and real life is that with models we can set the parameters as if they are known. In real life, these parameters are as clear as mud.

To check the accuracy of the model for predicting real life, I would ask that they run Italy for us to show us how well handwashing and isolation would work. How would they model what happened in Italy? On Feb 20, Italy had 3 cases and no deaths. On that day the modelers and the guidance CDC just released would not advise to take any aggressive action. On Feb 21, they had 1 death and 20 cases with 6 patients in the ICU. This is a country of 51 M. What would CDC guidance have advised Italy to do on Feb 21? On Feb 22, Italy had a cumulative total of 2 deaths, 63 cases with 7 patients in the ICU. How would CDC have described what was going on in Italy? Would this meet their definition of widespread community transmission? I doubt it. CDC and the CDC modeler would have recommended sitting tight. Italy responded extremely aggressively. This is what happened since. I think the public health officials and political leaders in Italy acted very quickly and very aggressively—much more quickly and aggressively than what we did when the outbreak began in Seattle two weeks ago. I would ask the modeler and CDC when they would have pulled the trigger in Italy. We have the actual data. The modeler can run his models and can point out what he/she would do and when it should be done. I suspect early on in Italy we would have heard exactly what we are hearing now.

I don't pretend to have perfect knowledge of the extent of disease in the US. There is a lot of uncertainty. But given this uncertainty, isn't the safest approach to close the schools until we know more? We can always reopen the schools. If we delay our response and the outbreak takes off like Italy, we will have made a terrible gamble with the lives of Americans, over what, an extend spring break? Which side of the bet would you take if you were the responsible official (mayor, governor, public health official)?

Again, nobody is advocating a short closure of schools. I don't think it would be prudent to play it cute and try to play chicken with this virus and hold out to the last moment to pull the trigger. It is like thinking you can time the market. You don't do that when thousands of lives potentially hang in the balance. That is what I would tell my mayor, or my governor, or my President.

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Friday, March 13, 2020 7:16 PM
To:
Cc: Lawler, James V; Parker Jr, Gerald W; Caneva, Duane; Tom Bossert; Hanfling, Dan; Gruber,David (DSHS); Dr. Eva Lee; CHRISTOPHER ALLEN; Richard Hatchett; McDonald, Eric; Borio, Luciana; Brian Benson; Tracey McNamara; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; rajeev.venkayya@takeda.com
Subject: Re: Red Dawn Raging Start March 4

By the way, Google is funny, part of their work will be re-inventing RealOpt -- the system we have already put in place since 2009 and have continous development CBRN capabilities and currently have 14,000 public health emergency response users. We have real-life drive-through models (all models have real-life data), dynamic real-time optimal resource allocation engine, optimal locations of facilities, optimal throiughpiut and capacity. We even have pediatric and special needs, and languag and socio-economic background etc. There's also the intra-facility disease spread disease models build-in, plus many more.

But I am sure with 1700 engineers, they will have at least 1,700 features. :).

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Friday, March 13, 2020 6:51 PM, wrote:

All,

I would question the underlying models being used, it's all in the assumptions, they drive the results. And as to the places that did well without school closures, each caught the epidemic before substantial transmission, this guidance is logically flawed.

Robert Glass

Sent from my iPhone

On Mar 13, 2020, at 4:33 PM, Lawler, James V <james.lawler@unmc.edu> wrote:

CDC is really missing the mark here. By the time you have "substantial community transmission" it is too late. It's like ignoring the smoke detector and waiting until your entire house is on fire to call the fire dept. Plus, how are you supposed to know when you have community transmission when they haven't been able to provide a diagnostic assay that can be used widely and at high volume?

James Lawler, MD, MPH, FIDSA

m:

james.lawler@unmc.edu

From: "Parker Jr, Gerald W" <gparker@cvm.tamu.edu>
Date: Saturday, March 14, 2020 at 1:16 AM
To: "Caneva, Duane" <duane.caneva@hq.dhs.gov>, Tom Bossert
Cc: Dan Hanfling <DHanfling@iqt.org>, "Dr. Eva K Lee" "Gruber,David (DSHS)" <David.Gruber@dshs.texas.gov>, "Dr. Eva Lee" "Lawler, James V" <james.lawler@unmc.edu>, CHRISTOPHER ALLEN Richard Hatchett <richard.hatchett@cepi.net>, "McDonald, Eric" <Eric.McDonald@sdcounty.ca.gov>, "Borio, Luciana" <LBorio@iqt.org>, Brian Benson Tracey McNamara <tmcNamara@westernu.edu>, "Baric, Ralph S" <rbaric@email.unc.edu>, "Mecher, Carter (VA.GOV)" <carter.mecher@va.gov>, "Hunt, Richard (OS/ASPR/EMMO)" <Richard.Hunt@hhs.gov>, "WILKINSON, THOMAS" <THOMAS.WILKINSON@hq.dhs.gov>, "Callahan, m." <MVCALLAHAN@mgh.harvard.edu>, David <DMarcozzi@som.umaryland.edu>, "Charity A@CDPH" <Charity.Dean@cdph.ca.gov>, Gregory J <MartinGJ@state.gov>, "Walters, William (STATE.GOV)" <walterswa2@state.gov>, "HAMILTON, CAMERON" <cameron.hamilton@hq.dhs.gov>, "Dodgen,tDanielt(OS/ASPR/SPPR)" <daniel.dodgen@hhs.gov>, "DeBord,Kristin (OS/ASPR/SPPR)" <Kristin.DeBord@hhs.gov>, "Phillips, Sally (OS/ASPR/SPPR)" <Sally.Phillips@hhs.gov>, "Matthew J CIV USARMY (USA)" <matthew.j.hepburn.civ@mail.mil>, Lisa Koonin "HARVEY, MELISSA" <melissa.harvey@hq.dhs.gov>, "WOLFE, HERBERT" <HERBERT.WOLFE@hq.dhs.gov>, "Eastman, Alexander" <alexander.eastman@hq.dhs.gov>, "EVANS, MARIEFRED" <mariefred.evans@associates.hq.dhs.gov>, "jwleduc@utmb.edu" <jwleduc@utmb.edu>, "Johnson, Robert (OS/ASPR/BARDA)" <Robert.Johnson@hhs.gov>, "Yeskey, Kevin" <kevin.yeskey@hhs.gov>, "Disbrow, Gary (OS/ASPR/BARDA)" <Gary.Disbrow@hhs.gov>, "Redd, John (OS/ASPR/SPPR)" <John.Redd@hhs.gov>, "Hassell, David (Chris) (OS/ASPR/IO)" <David.Hassell@hhs.gov>, "Hamel, Joseph (OS/ASPR/IO)" <Joseph.Hamel@hhs.gov>, "Wade, David" <david.wade@hq.dhs.gov>, "TARANTINO,

DAVID A" <david.a.tarantino@cbp.dhs.gov>, "KAUSHIK, SANGEETA" <sangeeta.kaushik@hq.dhs.gov>, "Lee, Scott (OS/ASPR/EMMO)" <Scott.Lee@hhs.gov>, Larry G <PadgetLG@state.gov>, Ryan Morhard <Ryan.Morhard@weforum.org>, "Steven Jt(tCHFStDPH)" <steven.stack@ky.gov>, "Adams, Jerome (HHS/OASH)" <Jerome.Adams@hhs.gov>, "Mansoura, Monique K." <mmansoura@mitre.org>, "Fantinato, Jessica (USDA.GOV)" <jessica.fantinato@usda.gov>, DC <michelle.colby@usda.gov>, "danny.shiau@usuhs.edu" <danny.shiau@usuhs.edu>, "Cordts, Jerome (CTR)" <jerome.cordts@associates.hq.dhs.gov>, "Schnitzer, Jay J" <jschnitzer@mitre.org>, "Ignacio, Joselito" <joselito.ignacio@fema.dhs.gov>, Will Gaskins <will.gaskins@efiia.com>, Kevin Montgomery <kevin@collaborate.org>, "Logan, Linda L" <llogan@cvm.tamu.edu>, LLogandakar "rajeev.venkayya@takeda.com" <rajeev.venkayya@takeda.com>
Subject: Re: Red Dawn Raging Start March 4

Non-UNMC email

CDC school closure guidance

https://www.cdc.gov/coronavirus/2019-ncov/downloads/considerations-for-school-closure.pdf

From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Sent: Friday, March 13, 2020 5:08 PM
To: Tom Bossert; Parker Jr, Gerald W
Cc: Hanfling, Dan; Dr. Eva K Lee; Gruber,David (DSHS); Dr. Eva Lee; Lawler, James V; CHRISTOPHER ALLEN; Richard Hatchett; McDonald, Eric; Borio, Luciana; Brian Benson; Tracey McNamara; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; rajeev.venkayya@takeda.com
Subject: Re: Red Dawn Raging Start March 4

We should measure it in different communities and find out.

Get Outlook for iOS

From: Tom Bossert
Sent: Friday, March 13, 2020 6:07:00 PM
To: Parker Jr, Gerald W <gparker@cvm.tamu.edu>
Cc: Hanfling, Dan <DHanfling@iqt.org>; Dr. Eva K Lee

Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Caneva, Duane <duane.caneva@hq.dhs.gov>; Dr. Eva Lee <eva.evalee. Lawler, James V <james.lawler@unmc.edu>; CHRISTOPHER ALLEN Richard Hatchett <richard.hatchett@cepi.net>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Borio, Luciana <LBorio@iqt.org>; Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; <rj Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar rajeev.venkayya@takeda.com <rajeev.venkayya@takeda.com>
Subject: Re: Red Dawn Raging Start March 4

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

That article snippet seems misleading. I wonder it the CDC guidance it's based on is equally unclear.

-Tom

On Mar 13, 2020, at 6:04 PM, Parker Jr, Gerald W <gparker@cvm.tamu.edu> wrote:

Carter and others - article just published in Politico Pro. CDC suggests school closures will not have much impact. There is a discussion of short term versus longer term... Is this misleading? What are your thoughts?

<pastedImage.png>

From:
Sent: Friday, March 13, 2020 4:35 PM
To:
Cc: 'Hanfling, Dan'; 'Dr. Eva K Lee'; 'Gruber,David (DSHS)'; 'Caneva, Duane'; 'Dr. Eva Lee'; 'Lawler, James V'; 'CHRISTOPHER ALLEN'; 'Tom Bossert'; Parker Jr, Gerald W; 'Richard Hatchett'; 'McDonald, Eric'; 'Borio, Luciana'; 'Brian Benson'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Mecher, Carter (VA.GOV)'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'Charity A@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; 'jwleduc@utmb.edu'; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; 'danny.shiau@usuhs.edu'; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; Logan, Linda L; 'LLogandakar'; 'rajeev.venkayya@takeda.com'
Subject: RE: Red Dawn Raging Start March 4

A cruise ship passenger in the Caribbean now

FIRST COVID-19 CASE DIAGNOSED IN CAYMANS – The Public Health Department confirms that one of the persons tested recently for the novel coronavirus has tested positive. “The patient is a visitor who was transferred from a cruise ship for a critical cardiac issue,” said Medical Health Officer, Dr. Samuel Williams-Rodriguez. Dr. Williams continued, “The patient was doing well but subsequently developed breathing difficulties, was isolated and a test taken has confirmed is suffering with the novel coronavirus.

More countries and overseas territories reporting their first cases:

Gabon

Ghana

Trinidad and Tobago

Kazakhstan

Kosovo

Suriname

Aruba

Guadeloupe

Cayman Islands

Uruguay 4

Venezuela 2

Guatemala 1

Kenya 1

Sudan 1

Ethiopia 1

From:
To: Dan"
Cc: "Dr. Eva K Lee",David (DSHS)", Duane", "Dr. Eva Lee", James V", "CHRISTOPHER ALLEN", "Tom Bossert", Gerald W", "Richard Hatchett", Eric", Luciana", "Brian Benson", "Tracey McNamara", Ralph S", Carter (VA.GOV)", Richard (OS/ASPR/EMMO)", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV)", CAMERON", "rj (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", David", DAVID A", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV)", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "Kevin Montgomery", Linda L", "LLogandakar", "rajeev.venkayya@takeda.com"
Sent: Friday March 13 2020 2:30:49PM
Subject: RE: Red Dawn Raging Start March 4

BREAKING: Los Angeles county in California announces the closure of all schools; this is the 2nd largest school district in the U.S. after NYC

From: "Hanfling, Dan"
To: "Dr. Eva K Lee", "Carter Mecher"
Cc: David (DSHS)", Duane", "Dr. Eva Lee", James V", "CHRISTOPHER ALLEN", "Tom Bossert", Gerald W", "Richard Hatchett", Eric", Luciana", "Brian Benson", "Tracey McNamara", Ralph S", Carter (VA.GOV)", Richard (OS/ASPR/EMMO)", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV)", CAMERON", (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", David", DAVID A", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV)", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "Kevin Montgomery", Linda L", "LLogandakar", "rajeev.venkayya@takeda.com"
Sent: Friday March 13 2020 2:15:35PM
Subject: RE: Red Dawn Raging Start March 4

Continuing to work this angle – but it is awfully hard to build the car while we are speeding down the highway – that notwithstanding, we are making incremental progress here.

https://www.washingtonpost.com/opinions/2020/03/13/your-smart-phone-could-be-essential-fight-against-coronavirus/

Dan Hanfling, MD

From: Dr. Eva K Lee
Sent: Friday, March 13, 2020 2:12 PM
To: Carter Mecher
Cc: Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Caneva, Duane <duane.caneva@hq.dhs.gov>; 'Dr. Eva Lee' 'Lawler, James V' <james.lawler@unmc.edu>; 'CHRISTOPHER

ALLEN' 'Tom Bossert' 'Parker Jr, Gerald W' <gparker@cvm.tamu.edu>; 'Richard Hatchett' <richard.hatchett@cepi.net>; 'McDonald, Eric' <Eric.McDonald@sdcounty.ca.gov>; Borio, Luciana <LBorio@iqt.org>; 'Brian Benson' 'Tracey McNamara' <tmcNamara@westernu.edu>; 'Baric, Ralph S' <rbaric@email.unc.edu>; 'Mecher, Carter (VA.GOV)' <carter.mecher@va.gov>; 'Hunt, Richard (OS/ASPR/EMMO)' <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; 'M.D.' <MVCALLAHAN@mgh.harvard.edu>; 'David' <DMarcozzi@som.umaryland.edu>; 'Charity A@CDPH' <Charity.Dean@cdph.ca.gov>; 'Gregory J' <MartinGJ@state.gov>; 'Walters, William (STATE.GOV)' <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; 'Dodgen,tDanielt(OS/ASPR/SPPR)' <Daniel.Dodgen@hhs.gov>; 'DeBord,Kristin (OS/ASPR/SPPR)' <Kristin.DeBord@hhs.gov>; 'Phillips, Sally (OS/ASPR/SPPR)' <Sally.Phillips@hhs.gov>; 'Matthew J CIV USARMY (USA)' <matthew.j.hepburn.civ@mail.mil>; 'Lisa Koonin' HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; 'jwleduc@utmb.edu' <jwleduc@utmb.edu>; 'Johnson, Robert (OS/ASPR/BARDA)' <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; 'Disbrow, Gary (OS/ASPR/BARDA)' <Gary.Disbrow@hhs.gov>; 'Redd, John (OS/ASPR/SPPR)' <John.Redd@hhs.gov>; 'Hassell, David (Chris) (OS/ASPR/IO)' <David.Hassell@hhs.gov>; 'Hamel, Joseph (OS/ASPR/IO)' <Joseph.Hamel@hhs.gov>; Hanfling, Dan <DHanfling@iqt.org>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; 'Lee, Scott (OS/ASPR/EMMO)' <Scott.Lee@hhs.gov>; 'Larry G' <PadgetLG@state.gov>; 'Ryan Morhard' <Ryan.Morhard@weforum.org>; 'Steven Jt(tCHFStDPH)' <steven.stack@ky.gov>; 'Adams, Jerome (HHS/OASH)' <Jerome.Adams@hhs.gov>; 'Mansoura, Monique K.' <mmansoura@mitre.org>; 'Fantinato, Jessica (USDA.GOV)' <jessica.fantinato@usda.gov>; 'DC' <michelle.colby@usda.gov>; 'danny.shiau@usuhs.edu' <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; 'Schnitzer, Jay J' <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; 'Will Gaskins' <will.gaskins@efiia.com>; 'Kevin Montgomery' <kevin@collaborate.org>; 'Logan, Linda L' <llogan@cvm.tamu.edu>; 'LLogandakar' 'rajeev.venkayya@takeda.com' <rajeev.venkayya@takeda.com>
Subject: RE: Red Dawn Raging Start March 4

Yes, virtual care is a must. This will supplemetn those who are coming in require direct interaction.

Virtual care is needed for at least 4 reasons.

1. To help leviate the surge of patient requests

2. To allow healthcare workers who are self-quarantine to be able to continue their care for other patients.

We want all the healthcare workers to be healthy. But if they're exposed to positive cases without knowing and have to be quarantine, can be due to exposure from family members or patients, then they are out. Their knowledge and expertise is critical and hence they need to use the tele-health capability to tend to patients.

3. Regular medical needs will be sidelined (as we can see in Italy, basically all scrapped). So we need to expand tele-health to those patients who need to be taken care of (outside covid-19). It is unclear if it is wise for them to walk into the clinic, so they can choose tele-health to get consult and advice.

4. School children may need medical care. Some of them may get healthcare check at school. Now school is out and we need to think about tele-health or mobile clinic.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Friday, March 13, 2020 1:34 PM, Carter Mecher wrote:

David you make a valid point. As the epidemic increases in intensity, the hospital capacity (defined by staffing) decreases as more staff become ill (following the epi curve) and the actions we take to slow the outbreak potentially add to the absenteeism. One thing to think about is how to effectively leverage HCWs who might be home for quarantine or who might be mildly ill and isolated at home or home with children because schools are closed. Bad combination of a surge in patients and short-staffed.

In another conversation we are having, we need to very quickly pivot to virtual care in the outpatient setting. It redefines what outpatient capacity even is.

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Friday, March 13, 2020 12:58 PM
To: Gruber,David (DSHS)
Cc: Caneva, Duane; cmecher@charter.net; 'Dr. Eva Lee'; 'Lawler, James V'; 'CHRISTOPHER ALLEN'; 'jamison.day@gmail.com'; 'Tom Bossert'; 'Parker Jr, Gerald W'; 'Richard Hatchett'; 'McDonald, Eric'; 'Borio, Luciana'; 'Brian Benson'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Mecher, Carter (VA.GOV)'; 'Hunt, Richard (OS/ASPR/EMMO)'; WILKINSON, THOMAS; 'M.D.'; 'David'; 'Charity A@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; HAMILTON, CAMERON; 'rjglassjr@ 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; 'jwleduc@utmb.edu'; 'Johnson, Robert (OS/ASPR/BARDA)'; Yeskey, Kevin; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Hanfling, Dan'; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; 'danny.shiau@usuhs.edu'; Cordts, Jerome (CTR); 'Schnitzer, Jay J'; Ignacio, Joselito; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'rajeev.venkayya@takeda.com'
Subject: Re: Red Dawn Raging Start March 4

Dave, yes, hosptial resources need to be considered and analyzed and optimized for the best outcome. I have incorporiated some hospital resources in the model but have not plotted the results out for circulation. I will start doing that later today. I can't draw a graph (by hand) like all of you. I am used to running the whole event and see what's happening. It is easier for me that way.

1. rapid testing, 2. timely implementation of NPI 3. Optimize and strategic hospital surge

all of them are inter-depending in a system network view, not linear. And clealry along these 3 there are many branches of (inter) dependencies coming out that need our attentions.

I will be doing a drive-through screening in DeKalb with the local leaders. Let's hope we get the test kits and the PPE. Does not seem like there's enough of anything.... the logistics chain there is very slow.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Friday, March 13, 2020 12:34 PM, Gruber,David (DSHS) <David.Gruber@dshs.texas.gov> wrote:

Much attention is to the graphic showing the impact of flattening the epi-curve on hospitals/healthcare. While I think it gets the point across I also think it is a bit misleading in that the line depicting healthcare capacity is flat.

During this outbreak, the hospital capacity line will drop significantly with an influx in patients even with NPIs and only come back up after modification of processes, reduction in cases or increases in resources are added.

I feel with so much visibility is on testing and NPIs, the focus on hospital and healthcare capacity is lost in the news cycle. Have drawn graphics below that show what's currently in the news and what should be presented (or at least used for public health and health planning.)

The linked image cannot be displayed. The file may have been moved, renamed, or deleted. Verify that the link points to the correct file and location.

Get Outlook for iOS

From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Sent: Friday, March 13, 2020 9:48:26 AM
To: 'Dr. Eva Lee' 'Lawler, James V' <james.lawler@unmc.edu>; 'Dr. Eva K Lee' <evalee-gatech@pm.me>; 'CHRISTOPHER ALLEN' <chrisallen 'Tom Bossert' 'Parker Jr, Gerald W' <gparker@cvm.tamu.edu>; 'Richard Hatchett' <richard.hatchett@cepi.net>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; 'McDonald, Eric' <Eric.McDonald@sdcounty.ca.gov>; 'Borio, Luciana' <LBorio@iqt.org>; 'Brian Benson' 'Tracey McNamara' <tmcNamara@westernu.edu>; 'Baric, Ralph S' <rbaric@email.unc.edu>; 'Mecher, Carter (VA.GOV)' <carter.mecher@va.gov>; 'Hunt, Richard (OS/ASPR/EMMO)' <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; 'M.D.' <MVCALLAHAN@mgh.harvard.edu>; 'David' <DMarcozzi@som.umaryland.edu>; 'Charity A@CDPH' <Charity.Dean@cdph.ca.gov>; 'Gregory J' <MartinGJ@state.gov>; 'Walters, William (STATE.GOV)' <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; 'Dodgen,tDanielt(OS/ASPR/SPPR)' <Daniel.Dodgen@hhs.gov>; 'DeBord,Kristin (OS/ASPR/SPPR)' <Kristin.DeBord@hhs.gov>; 'Phillips, Sally (OS/ASPR/SPPR)' <Sally.Phillips@hhs.gov>; 'Matthew J CIV USARMY (USA)' <matthew.j.hepburn.civ@mail.mil>; 'Lisa Koonin' HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; 'jwleduc@utmb.edu' <jwleduc@utmb.edu>; 'Johnson, Robert (OS/ASPR/BARDA)' <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; 'Disbrow, Gary (OS/ASPR/BARDA)' <Gary.Disbrow@hhs.gov>; 'Redd, John (OS/ASPR/SPPR)' <John.Redd@hhs.gov>; 'Hassell, David (Chris) (OS/ASPR/IO)' <David.Hassell@hhs.gov>; 'Hamel, Joseph (OS/ASPR/IO)' <Joseph.Hamel@hhs.gov>; 'Hanfling, Dan' <DHanfling@iqt.org>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; 'Lee, Scott (OS/ASPR/EMMO)' <Scott.Lee@hhs.gov>; 'Larry G' <PadgetLG@state.gov>; 'Ryan Morhard' <Ryan.Morhard@weforum.org>; 'Steven Jt(tCHFStDPH)' <steven.stack@ky.gov>; 'Adams, Jerome (HHS/OASH)' <Jerome.Adams@hhs.gov>; 'Mansoura, Monique K.' <mmansoura@mitre.org>; 'Fantinato, Jessica (USDA.GOV)' <jessica.fantinato@usda.gov>; 'DC' <michelle.colby@usda.gov>; 'danny.shiau@usuhs.edu' <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; 'Schnitzer, Jay J' <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; 'Will Gaskins' <will.gaskins@efiia.com>; 'Kevin Montgomery' <kevin@collaborate.org>; 'Logan, Linda L' <llogan@cvm.tamu.edu>; 'LLogandakar' <llogandakar@gmail.com>; 'rajeev.venkayya@takeda.com' <rajeev.venkayya@takeda.com>
Subject: RE: Red Dawn Raging Start March 4

The Healthcare Sector private/ public partners need to organize in a national health reliability organization structure unhindered by government bureaucracy.

Change my mind.

NHRO fiddled while Rome burned…

Hurricane Irma was one of the costliest hurricanes in U.S. history at nearly $50 Billion in damages. It hit the Florida Keys heading north on September 10, 2017, heading up Florida's western coast, leaving Florida as a Tropical Storm and entering Georgia on September 11. In preparation for the storm, the Energy Sector pre-staged response resources near the state but outside the projected path of the storm. Governor Rick Scott quickly declared a state of emergency authorizing Energy Sector workers from outside of Florida to support response operations, and within 3 days of Irma leaving Florida, over 60,000 Linesman technicians from 48 states and Canada entered Florida to repair the damaged power lines and restore electricity to about 6.5 million customers who had lost power. All were licensed professionals under the management of the private sector coordinating with Florida and FEMA for the hurricane response. Their wages were paid by Florida Power and Lights Company, those costs covered by a hurricane insurance policy paid for by its customers as part of their rates.

The National Disaster Medical System used up the last of its 4000 responders' deployment time. They were completely tapped out.

II. Why a National Health Reliability Organization (NHRO)? The House of Medicine and the Need for Standards Development Processes

We can look to the Energy Sector for instructive solutions driving reliability that may apply to the Health Sector. The Federal Power Act (FPA) of 2005 derived the authorities for the Federal Energy Reliability Commission (FERC) to have oversight of an Electric Reliability Organization (ERO), ultimately the National Electric Reliability Corporation (NERC), in its responsibilities to develop and enforce mandatory "reliability standards". These standards impose requirements on users, owners, and operators of the bulk power system to ensure reliability of the power grid. Over $1 Trillion in infrastructure owned and operated by over 3,500 utility organizations provides electricity to over 334 million customers.

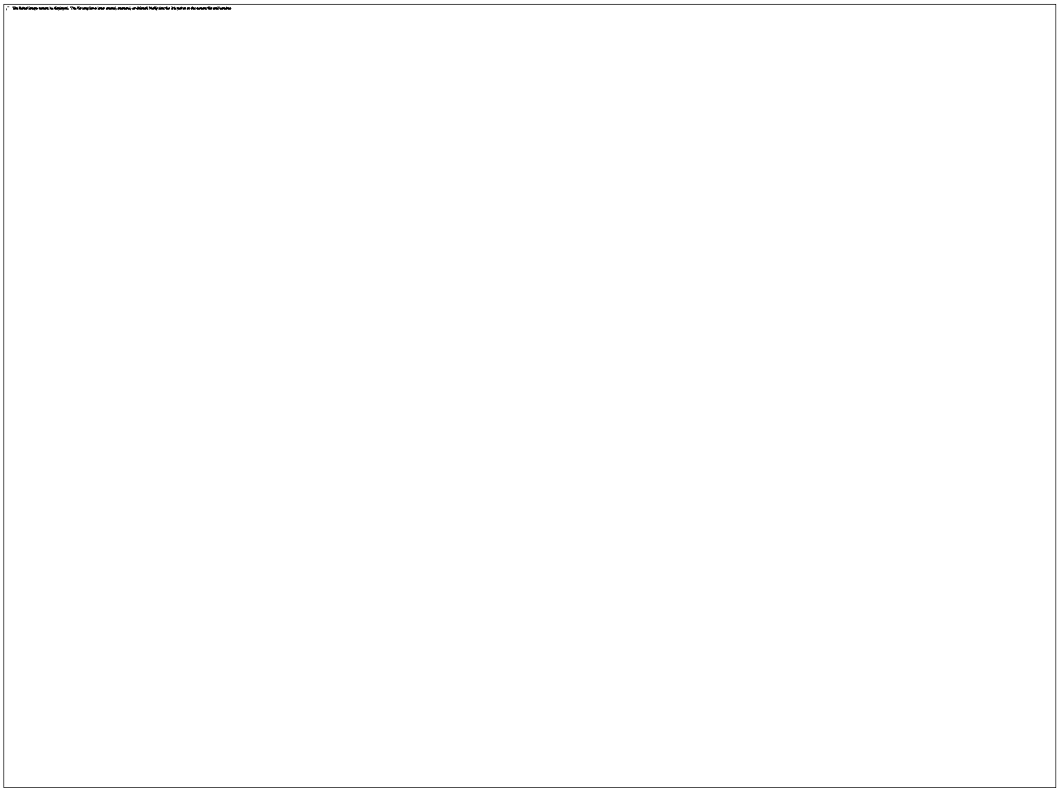
The Energy Sector had its watershed moment with the Great Northeast Blackout of 1965 when a faulty setting of a protective relay on a high voltage transmission line in Ontario, Canada, failed. Over 30 million customers in the Northeast were without power for nearly 13 hours. In response to the blackout, voluntary reliability councils were established to investigate the causes and develop measures to reduce the likelihood of such events recurring. The NERC was established to provide a means for coordinating among interconnected utilities to ensure that the transmission network in the U.S. was reliable, adequate, and secure. In 1981, as the grid expanded to include sections of Canada and Mexico, the NERC changed from the *National* to the *North American* Electric Reliability Corporation with the same NERC acronym. On August 14, 2003, North America experienced its largest power blackout affecting 50 million customers extending across the Northeast into the Midwest. The cause was linked to "the 3 T's" of power outages—trees, tools, and (lack of) training. As a result, Congress added Section 215 to the Federal Powers Act of 2005 that authorized the development of mandatory Reliability Standards by an independent electric reliability organization. This mandatory approach replaced the industry's voluntary protocols and guidelines for operating and planning the bulk power system that had been in place since the 1960's. While the NERC only covers bulk power generation and transmission, the regional councils broadened the membership to include all segments of the electric industry bulk power supply.

While NERC reliability standards do not cover the local, lowered voltage distribution of electricity--the power lines most often affected from storms--the industry as a whole has extended the reliability culture to the end customer through the NERC governance process that includes public stakeholders (i.e., customers) in the review of nearly all standards. Many corporations operate in bulk generation, transmission, *and* distribution, so are incentivized to "keep the lights on". Within the industry, "coopetition" thrives because of the

interdependencies, and the need for mutual aid and assistance that is frequently needed. And, at the end of the day, the industry is required to be reliable—keep the power on, and keep it affordable.

In the Health Sector, the same risks of cascading effects exist in the form of public health emergencies. The Sector is decentralized with limited, traditional, ineffective standards development processes and a splintered organizational structure. Associations, academies, and societies are formed by medical guilds to ensure specialty voices are heard; however, very little signal rises above the noise unless done so through adversity, crisis, or sensationalism. Contagious diseases, poorly established practices, defective devices, or dangerous treatments can impact the end customers, but the Sector lacks the infrastructure or mechanisms to measure and recognize adverse outcomes rapidly and effectively. The private sector is essentially disconnected from government coordination except through limited, tenuous paths, including licensing at the state level, and reimbursement rates by the Center for Medicare and Medicaid Services (CMS) driving standards and pricing. The “House of Medicine”, $3.5 Trillion of annual economic activity in the U.S., is not merely a house divided, it is a house in splinters. So, what would a “Health Reliability Organization” look like in our health sector?

Figure 1. A National Health Reliability Organization (NRHO) for the House of Medicine, $ 3.5T of economic activity.



This ICE is Cool…

Amir Patel is a patient recovering from 4 vessel coronary artery bypass graft (CABG) surgery in a small, private hospital in Calcutta, India. Under the watchful eyes of his intensive care unit nurses, he has no less than 12 medical devices monitoring or treating his condition, including a pulsox to monitor his oxygen levels, an end-tidal CO2 monitor, an ECG monitoring his heart rate and tracing, several IV infusion pumps giving him IV fluids and medicines, and a blood pressure cuff cycling every 10 minutes to measure his blood pressure. Each device operates independently from the other with alarms programmed to trigger should that device detect some abnormal level of function. All of the data from these devices is being captured and recorded in an Integrated Clinical Environment (ICE) device—an “ICE Box”. It is a large amount of data that, under normal circumstances will never make it to Amir’s electronic health record. But today, unfortunately,

this will not be a normal outcome. One of Amir's graft sutures to a vessel supplying blood to his heart has failed, and the vessel is leaking. Though several of the devices are registering significant, detectable changes consistent with this blood loss and the loss of blood supply to his heart, none are reaching a threshold level to alarm. By the time one of them alarms, and the nurse responds, and the surgeon is consulted, and they investigate and identify the cause of the alarm, Amir has lost too much blood to his heart and suffers a fatal cardiac arrest. While this is a known complication and risk of these surgeries, his surgeon is not satisfied.

This surgeon, a renowned cardiac surgeon who practiced in the United States for decades before "retiring" and opening this specialty hospital in India, provides these surgeries to patients for a flat fee of $ 600. The patients would otherwise have no hope of affording it elsewhere. His hospital is extremely efficient, utilizing a systems operations engineered approach to optimize the process. He is also working with a research project from the U.S. to integrate the data from the multiple medical devices into the ICE Box. On analyzing the output from Amir's case, he is able to identify a pattern of changes captured by several of the medical devices that demonstrated a predictable pattern expected with this type of complication. This pattern begins to emerge nearly 30 minutes before any single device alarms, and it is fairly specific for the injury type. Applying this pattern to all the patients in his care, he now has a more sensitive indicator for an adverse outcome that is also specific to the type of complication that is occurring. It can be applied as an "algorithm" looking across the entire enterprise to identify complications earlier to the benefit of all patients being monitored and improving the quality of care. It is likely additional devices could add sensitivity or specificity to the predictive strength. It's also likely there are patterns that identify other complications, that they can be further refined for sensitivity and specificity— cool, always improving apps for the ICE Box.

But where do these algorithms or apps get submitted? How are they validated? Who controls the "library" or registry for other such algorithm? Is this intellectual property? Is there a marketplace for these discoveries? Who controls what goes on the shelves in the ICE Box?

III. National Health Reliability Organization Systems Architecture

The rate of technology advancements across the various sectors of society continues its exponential climb. The balance between regulatory oversight and free, unfettered development and innovation must be managed through a deliberate, intentional, systematic process. Public-private partnerships play a role, as do development of consensus based industry standards. Title XII of Energy Policy Act of 2005 added Section 215 to the Federal Powers Act that authorized the Federal Energy Regulatory Commission (FERC) to certify an independent electric reliability organization to develop and enforce mandatory Reliability Standards. This empowered the private sector to self-enforce compliance of its industry standards. If and how this could be applied in the Health Sector requires much further, careful consideration. It requires the collection of data to analyze and validate outcomes. It introduces new drivers for the sector that seek to optimize operations, improve efficiency, and incorporate improvements system wide that are evidence-based. It requires new tools and disciplines to find these efficiencies, identify risk, improving quality while reducing costs.

A. Basic Organizing Principles Applied to the National Healthcare Reliability Organization (NHRO)

Guiding Principles (Harvard Leadership Course)

- Unity of Effort
- Generosity of spirit and action
- Stay in one's lane and assist others to succeed in theirs
- No ego, no blame

- A foundation of trusting relationships

Structural Principles

- **Map the Systems Architecture Out**: Enterprise Architecture with Agile Taxonomy (Folksonomy) and Ontology that captures the Engineered, Systems of Systems of the sector
- **Determine the Business Rules**: Business Process Management with structured Rules of Engagement
- **Use a Common Enterprise Knowledge Management System:** Keep data authoritative and relational, Web 2.0, 3.0 enabled.
- **Measure the Performance:** Outcomes, Cost, Efficiency, Effectiveness, Risk Analysis, Process Improvement, Learning

B. National Health Regulatory Oversight and Governance (NHROG)

- The NHROG authority would be empowered under a National Healthcare Reliability Act
- Would focus primarily on *oversight* of the development, implementation, enforcement, and validation processes of "healthcare reliability standards" developed by the National Health Reliability Organization (NHRO).

  - Ensure the stakeholders in the Health Sector fulfill their responsibilities in providing reliability of the Health Sector–quality, affordability, and accessibility.
  - Health reliability standards impose requirements on stakeholders in the Health Sector that address beyond day to day "blue sky" operations to include preparedness for and response to “black sky days”--risks identified through Health Sector threat and hazard identification risk assessments (THIRA) and individual hazard and vulnerability assessments at the local, state, and regional level.

C. Proposed Federal Executive Oversight Council

Staffs of these offices support process, projects, and proposals. If the commission lacks sufficient regulatory power, the HHS components would need to be considered to be given additional regulatory oversight investigation, and auditing authorities to ensure that industries and organizations do not pose threats to public safety or well-being.

- White House: National Economic Council (1), Domestic Policy Council (1), National Security Council (1)
- HHS (9): ASPR, ASH, FDA, NIH, NIAID, CDC, CMS, SG, ONCHIE
- DOD (2): ASDHA, TMA
- VHA
- DHS: CMO
- USDA
- DOC (NIST)
- DOJ
- State (MED)
- Ad hoc participants: National Center for Medical Intelligence (NCMI), DOJ/ FBI, DOL (OSHA), EPA, ODNI, NCTC, DOD Branch Surgeons General, Regional Combatant Commanders Command Surgeons
- **State/ Tribal/ Territorial Health Regulatory Oversight Authorities**

  - State Public Health organizations and agencies

▪ Quarantine

- Professional licensing and monitoring authorities
- Emergency waiver process during disasters
- EMACs
- Prescription Monitoring
- Biohazardous Waste Handling and Transport
- EMS Systems
- County and City Health Departments

D. National Health Reliability Organization (NHRO):

- Mission: Ensure the reliability of healthcare sector to the American public with the triple aim of quality, affordability, and accessibility. This includes during response to predictable disasters.
- Vision: A national healthcare sector that unleashes the innovation and compassion of the American people working in the free-market economy to provide reliable healthcare to the nation.
- Purpose: Provide the Healthcare sector a structure for self-governance to provide reliability--quality healthcare that is affordable and accessible. The NHRO is answerable to oversite for standards development, implementation, compliance, and validation.
- Goals:

o Ensure a reliable, resilient Health Sector able to meet the healthcare needs of the nation even under extreme conditions or circumstances

o Drive innovation in healthcare to reduce costs, gain efficiencies, and improve individual and national health and wellness,

o Recruit the next generation of researchers and healthcare providers that continue to innovate and provide compassionate, reliable healthcare.

- Includes Private Sector Organizations, Associations in membership
- **The Regional Disaster Healthcare Response System (RDHRS)** is the preparedness model of the nation's Healthcare System: Hospital or cluster of hospitals covering a defined catchment area that is integrated with community level critical sector partners including public works, public safety, energy, transportation, logistics, and all of the Medicare and Medicaid Participating Providers and Suppliers
- Example from the Energy Sector: "North American Electric Reliability Corporation (NERC)"

NHRO Lead Council

- Chairman elected by Member Voters
- Executive Committee composed of NHRO Committee.
    - Answers to the NHROG
- Reports to the Administration, Congress, Members, Customers
- Coordinates with Health Sector Coordinating Council (SCC)/ Government Coordinating Council (GCC)
- Administrative Support Staff (n=100's)
- Chartered with corporate governance processes, most work and output is done virtually.
- Public and External (inter-sector) Affairs

Admin Support Staff and the Gateway

- Gateway into the NHRO Environment
- Administrative support staff (n=100's) connected via the Portal Enterprise who manage the activities behind the scenes
- Help Desk for issues, topics, projects
- Virtual Emergency Operations Center, Incident management capability
- Information Sharing Analysis Center (ISAC)

Members (Partners?)

- Any organization engaged in meaningful aspects of healthcare or public health in the United States
  - Obligation to keep healthcare reliable–affordable, accessible, of good quality
  - Based on Mission, Purpose, Objectives, Activities
- Associations, Organizations, Professional Societies, Corporations, Hospitals
- All Members are characterized and "tagged" with specific traits for matching to "Alliances": Committees, Sub-committees, issues and projects
  - Functional Mission and Purpose
  - THIRA Risks
  - The 10 Dimensions of National and Homeland Security Framework
  - Financial (e.g., revenues, Profit/ non-profit)

Voters (Members?)

- Voters are members or employees of the Associations, Organizations, Hospitals, Corporations
- Voters retain one vote for each organization that they participate in that is a member of the NHRC.
- For hospitals and CMS Participating Providers and Suppliers, this includes staff members that are credentialed and privileged
- Note that many federal workers are voters through their professional associations
- Excludes unions

Committees and Subcommittees

Committees mirror the oversight within the Federal departments and agencies for ONE Health and the components contributing to healthcare and public health.

- They further define oversight to streamline process, clarify roles, responsibilities, and authorities, and facilitate coordination across the sector and public private partnership (FHRC/ NHRC)
- Chairman of Committees sit on the NHRC Executive Committee
- Sub-committees may be formed to account for greater specificity of effort.
- Alliances, issues, and projects may work across committees and sub-committees
- Committees/ sub-committees may want to include separate but linked issues/ projects that are closely related but look for different outcomes through the Forum.

- Committees are topic based and address issues that are interdependent. They use a matrixed approach to work issues and projects.
  - Healthcare Coalitions and Systems
  - Outcomes, Performance, and Learning
  - Biosafety and Ethics
  - Workforce
    - Education, Training, Certifications
    - Recruitment, Suitability, Career Progression
    - Professional Ethics Compliance
  - Implementation
  - Compliance and Enforcement
  - Global Health Security
  - Food Safety and Security
  - Drug Safety, Security, and Utilization
  - Science and Technology Advancement
    - Artificial Intelligence (AI) and Patient Interface
    - Diagnostics
    - Therapeutics
    - Advanced Vaccine Development
  - Healthcare Economics
  - Biodefense and National Security
  - Preparedness and Response to All Hazards
  - Health Information Technology and Data Exchanges

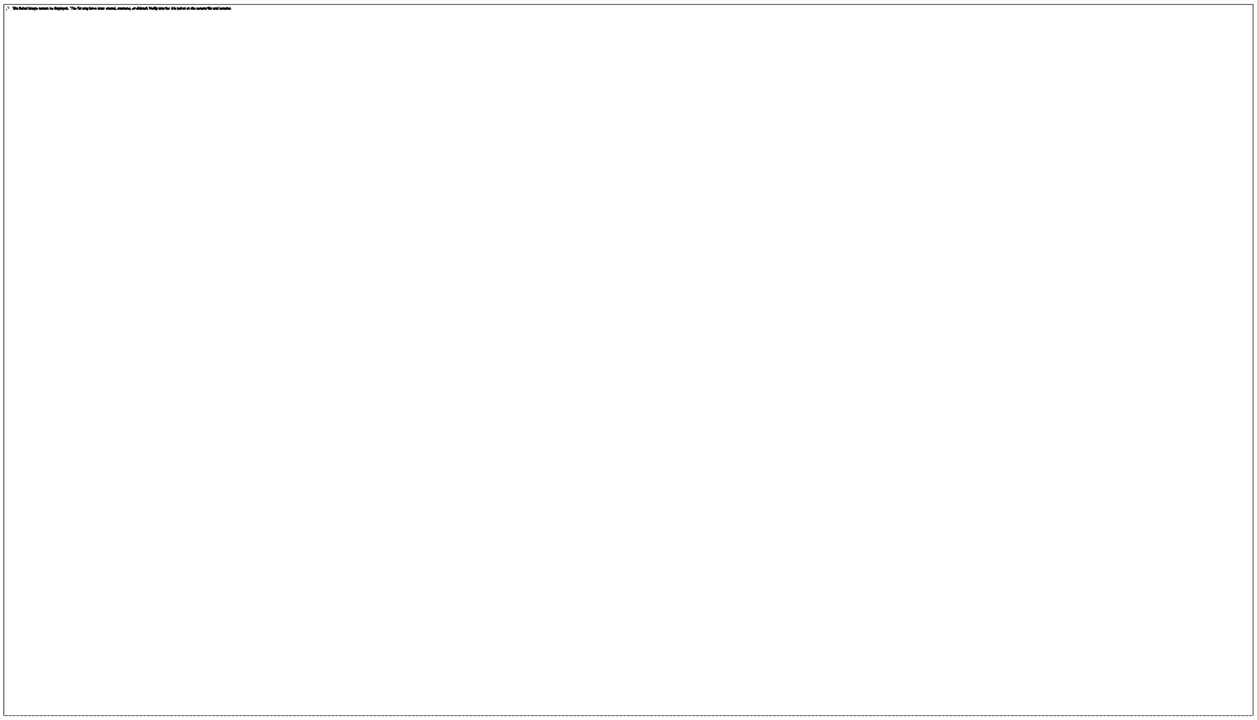


Figure 2. Standards Setting Organization Function for the National Health Reliability Organization (NHRO)

E. Standards Development Process, Alliances, and Working Groups

Alliances are determined by Issues or Projects, using members' characterizations to identify who should participate.

- Requires a very detailed taxonomy and ontology of the healthcare system
- Relevance determines "mandatory" participants and "ad hoc".

o Measurements and weighting factors identify significance of elements and their links and attachments to other elements to identify relevance for prioritization of attention and action level

o Thresholds identify triggers and warning signaling or flags for attention to issues identified

o Weighting factors employ fuzzy logic to capture various factors impacting relevance

o Comprehensive PowerPoint Presentation

- Relationships

o The system uses algorithms and smart humans using search to seek out common functions, objectives, activities, tasks, roles, responsibilities, authorities that indicate synergies that should be matched, aligned, collaborative, or may offer ready-made solutions.

▪ "Match.gov"-like capability

o Seeks to avoid redundant work, leverage good work already done, allow for crowd-sourcing issues for solutions.

o Breaks through silos.

o Interoperability, Dependency, Interdependency, Collaboration, Coordination

o Personal relationships are promoted via gamification and use of avatars highlighting characteristics of users and leveraging the diversity of skill sets, talents, and experience, and characteristics

▪ Build great teams that express the diversity of personalities in the dramedy of the workplace

- Mandatory participants are those with "skin in the game", primary expertise or operational relevance to the issue (including secondary relevance).
- Operational Filters: Need to find all those with primary, secondary, tertiary interdependencies to consider the solutions

o The systems are complex, non-linear, and dynamic over time

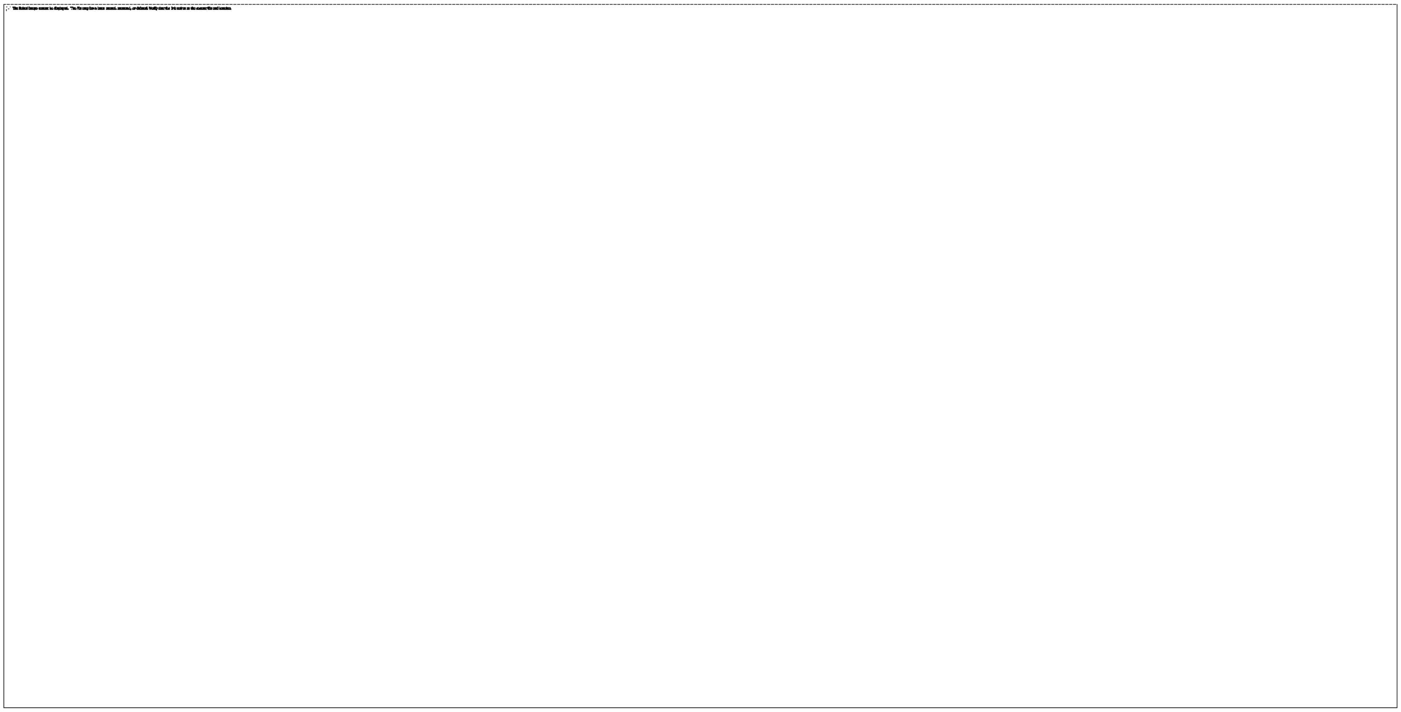
o Solutions must be crowd-sourced (not group-think) to find single points of failure

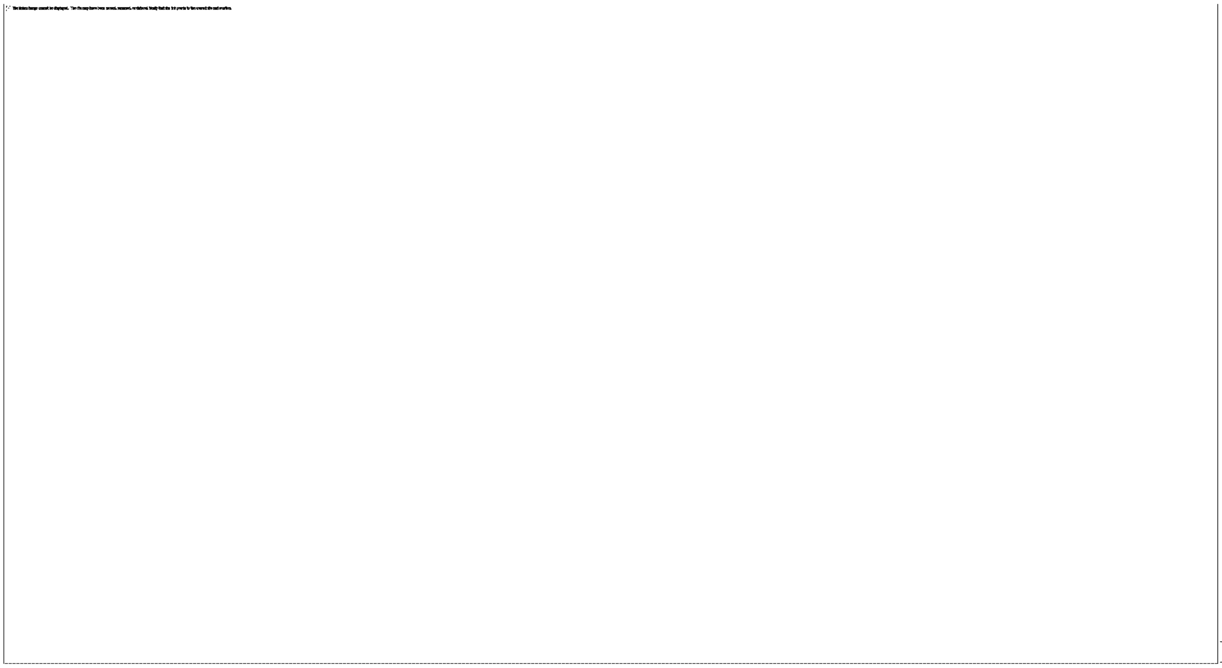
o The NHRC must measure outcomes across all healthcare coalitions to pick up indicators and warnings of failure points

- Operational mandates: The sector must account for beyond the daily routine missions and be able to conduct operational response that is unified with FSLTT government efforts.
- Solutions may also need to be customized to account for variables specific to or that have greater impact on different parts of the system.

o For example, power outage requirements for air-conditioning in hospitals or nursing homes in the South during summer or heat in the North during winter.

Figure 3. diagram displays the process for developing topical committees, multi-disciplinary representation, and standards development structure.





F

Figure 4 displays the sub-components of main topics, broken down further to critical sub-topics

F. Health Information Data Exchanges

Health Information Data Exchanges (HIDE) represent a new, emergent sub-sector

- A cottage industry allowing for secure, private sharing of data and information to optimize the healthcare provided nationwide
- Data has intrinsic and extrinsic value. Big data has big value. Trash or treasure, who can use the data?
- Data sharing/ brokerages in support of the NHRC.

- Another analogous system is the National Weather Service--billions of dollars invested in weather stations, satellite systems, and computational science now allows very accurate characterization, forecasting, and prediction of local weather patterns and national impact.
- Internet of Things (IoT) will collect data. The integration of data layers will need to be explored to find meaningful information (improving quality, decreasing cost, increasing access to healthcare).
- Should be a part of the publication of medical journals consolidated into libraries (see "The Academy" below).
- Actuarial versus statistical data outcomes that include additional data layers (demographics, geo-spatial locations, time, geography...)
- Algorithms for search, treatment, research, surveillance,
- Registries (virtual and active) for disease processes, treatments, etc..

G. The Forum

The Forum captures the business process "Rules of the Road" for addressing issues and projects using PNP Project Management Principles

- Wiki collaboration capturing authoritative, relational data in netcentric operations style with smart push, pull
- Provides situational awareness and is transparent to the public
- Has an associated healthcare information/ data exchange for capturing and measuring outcomes
- Issues/ Projects can be specific to national, regional, state, county, community, healthcare coalition
- Captures progression of projects/ issues through 8 phases

o Deconstruction: Identifying the issue in detail to irreducible complexity including manpower, organizational structure, requirements, equipment, training, exercises, assessments, maintenance (annual costs), sustainment (outyear costs)

It should all use a standard format that forces the details to be determined up front. This makes assessment and outcome metrics determination easier (or possible) later on.

o Assimilation: identifying relevant members to form the sub-committee (alliance) and bring them together to work the issue/ project

o Construction:

o Adjudication

o Implementation

o Assessment

o Analysis

o Outcomes Reporting and Standards Development

- Output is a "Standard", "Practice", or appropriately titled solution that is presented back to the appropriate subcommittee/ committee for review and approval, then sent to the appropriate regulatory entity for review.
- Compliance: Ensures objectives of the project are being met and are aligned with Healthcare Reliability Standards

Figure 5 displays the Forum process for Project Management and Workflow for development, implementation, and validation of standards, best practices, guidelines.

From:

Sent: Friday, March 13, 2020 9:03 AM

To:

Cc: Subject: Re: Red Dawn Raging Start March 4

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

Virginia is developing its own coronavirus tests, and urged public schools to make their own decisions on whether to cancel classes. Loudoun County Public Schools will be closed through next week. Fairfax County, the region's largest school system, announced late Thursday that it would be closed Friday and was cancelling after-school activities and field trips through April 12; Fairfax schools were already slated to be closed Monday so staff could prepare to teach classes online if necessary.

From:

To:

Cc: "Dr Eva Lee", James V", "Dr. Eva K Lee", "CHRISTOPHER ALLEN", "Tom Bossert", Gerald W", "Richard Hatchett",David (DSHS)", Eric", Luciana", "Brian Benson", "Tracey McNamara", "Duane Caneva", Ralph S", Carter (VA.GOV)", Richard (OS/ASPR/EMMO)", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV)", CAMERON", "rjglassjr@gmail.com",tDanielt(OS/ASPR/SPPR)",Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)",

"Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", David", DAVID A", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV)", "DC", "dannyshiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "Kevin Montgomery", Linda L", "LLogandakar", "rajeev.venkayya@takeda.com"

Sent: Friday March 13 2020 7:10:30AM

Subject: Re: Red Dawn Raging Start March 4

+Rajeev

From:

To:

Cc: "Dr. Eva Lee", James V", "Dr. Eva K Lee", "CHRISTOPHER ALLEN", "jamison. "Tom Bossert", Gerald W", "Richard Hatchett",David (DSHS)", Eric", Luciana", "Brian Benson", "Tracey McNamara", "Duane Caneva", Ralph S", Carter (VA.GOV)", Richard (OS/ASPR/EMMO)", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV)", CAMERON", "rjglassjr@gmail.com",tDanielt(OS/ASPR/SPPR)",Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", David", DAVID A", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV)", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "Kevin Montgomery", Linda L", "LLogandakar"

Sent: Friday March 13 2020 7:09:26AM

Subject: Re: Red Dawn Raging Start March 4

This is what leadership looks like.

"*We whole-heartedly endorse the bold and decisive decisions of our Governor here today. This is not about a healthcare system; this is about all of us. We can all fight back against this virus, and in fact, we need to. The health care system can treat those who are ill; and across all of Maryland, we're readying ourselves in case we need to However, by putting aggressive steps in place that the Governor just outlined with regard to social distancing, closures of schools, teleworking – these are steps we can all adopt…the earlier we do this, the more layers we put in place, the less this virus can be transmitted. That's the key.*" Dr. Marcozzi, at a press conference hosted by Governor Larry Hogan announcing major steps in the state of Maryland's COVID-19 response. Those steps included

- Maryland Emergency Management Agency increase activation to highest level
- Activate national guard
- All state government is raised to elevated level 2 - all non-essential employees who can telework required to do so
- Public access to state buildings restricted
- **No gatherings of more than 250+ people** (including sports and religious gatherings)
- All senior centers closed
- All state and local government buildings with more than 250+ people must follow social distancing
- Close cruise ship terminal in Baltimore

o Extension of expiration dates on permits including drivers licenses, license plates, professional licenses, until 30 days after end of state of emergency

o All hospitals adopt new visitor policies to stop spread of COVID-19

o All prisons will suspend visits

o All non-essential functions of government are now managed by Lt Gov Rutherford so Gov Hogan can focus solely on COVID-19

o **Monday, March 16 through Friday, March 27 - all public schools closed**

o Measures taken to provide child care for essential workers/first responders

----

From: cmecher@charter.net

To: "Dr. Eva Lee"

Cc: James V", "Dr. Eva K Lee", "CHRISTOPHER ALLEN", "Tom Bossert", Gerald W", "Richard Hatchett",David (DSHS)", Eric", Luciana", "Brian Benson", "Tracey McNamara", "Duane Caneva", Ralph S", Carter (VA.GOV)", Richard (OS/ASPR/EMMO)", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV)", CAMERON", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", David", DAVID A", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV)", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "Kevin Montgomery", Linda L", "LLogandakar"

Sent: Thursday March 12 2020 10:30:31PM

Subject: Re: Red Dawn Raging Start March 4

https://www.chicagotribune.com/coronavirus/ct-nw-coronavirus-united-states-school-closings-20200312-sh2d5vi525drvcf5dwm7hnebru-story.html

Here is the list of states now closing schools. Add Kentucky too. Illinois had a press briefing and they are getting ready.

Getting close to the tipping point.

From: "Dr. Eva Lee"

To: James V"

Cc: "Dr. Eva K Lee", "CHRISTOPHER ALLEN", "Tom Bossert", Gerald W", "Richard Hatchett",David (DSHS)", Eric", Luciana", "Brian Benson", "Tracey McNamara", "Duane Caneva", Ralph S", Carter (VA.GOV)", Richard (OS/ASPR/EMMO)", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV)", CAMERON", (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", David", DAVID A", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV)", "DC", "danny.shiau@usuhsedu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "Kevin Montgomery", Linda L", "LLogandakar"

Sent: Thursday March 12 2020 9:45:09PM

Subject: Re: Red Dawn Raging Start March 4

This is great. WA is not quite fully, just partial. MA, CA, and NY should act immediately. They have big fire to fight.

Grocery store is very long line now (in Atlanta)! And shelves are very empty. Oh dear!

On Thu, Mar 12, 2020 at 9:14 PM Lawler, James V <james.lawler@unmc.edu> wrote:

NE has its finger on the trigger. We will pull (regionally) as soon as we hit our threshold. Full NPI. We have great state leadership on this.

James Lawler, MD, MPH, FIDSA

Director, International Programs & Innovation

Global Center for Health Security, and

Associate Professor of Medicine

Division of Infectious Diseases

University of Nebraska Medical Center

m:

james.lawler@unmc.edu

From:
Sent: Friday, March 13, 2020 4:00:38 AM
To: <cmecher@charter.net>
Cc: 'Dr. Eva K Lee' 'CHRISTOPHER ALLEN' <chrisallen 'Dr. Eva Lee' <eva.evalee.lee64@gmail.com>; Lawler, James V <james.lawler@unmc.edu>; 'Tom Bossert' 'Parker Jr, Gerald W' <gparker@cvm.tamu.edu>; 'Richard Hatchett' <richard.hatchett@cepi.net>; 'Gruber,David (DSHS)' <David.Gruber@dshs.texas.gov>; 'McDonald, Eric' <Eric.McDonald@sdcounty.ca.gov>; 'Borio, Luciana' <LBorio@iqt.org>; 'Brian Benson' 'Tracey McNamara' <tmcNamara@westernu.edu>; 'Duane Caneva' <duane.caneva@hq.dhs.gov>; 'Baric, Ralph S'

<rbaric@email.unc.edu>; 'Mecher, Carter (VA.GOV)' <carter.mecher@va.gov>; 'Hunt, Richard (OS/ASPR/EMMO)' <Richard.Hunt@hhs.gov>; 'WILKINSON, THOMAS' <THOMAS.WILKINSON@hq.dhs.gov>; 'M.D.' <MVCALLAHAN@mgh.harvard.edu>; 'David' <DMarcozzi@som.umaryland.edu>; 'Charity A@CDPH' <Charity.Dean@cdph.ca.gov>; 'Gregory J' <MartinGJ@state.gov>; 'Walters, William (STATE.GOV)' <walterswa2@state.gov>; 'HAMILTON, CAMERON' <cameron.hamilton@hq.dhs.gov>;
'Dodgen,tDanielt(OS/ASPR/SPPR)' <Daniel.Dodgen@hhs.gov>; 'DeBord,Kristin (OS/ASPR/SPPR)' <Kristin.DeBord@hhs.gov>; 'Phillips, Sally (OS/ASPR/SPPR)' <Sally.Phillips@hhs.gov>; 'Matthew J CIV USARMY (USA)' <matthew.j.hepburn.civ@mail.mil>; 'Lisa Koonin' <lkoonin1 'HARVEY, MELISSA' <melissa.harvey@hq.dhs.gov>; 'WOLFE, HERBERT' <HERBERTWOLFE@hq.dhs.gov>; 'Eastman, Alexander' <alexander.eastman@hq.dhs.gov>; 'EVANS, MARIEFRED' <mariefred.evans@associates.hq.dhs.gov>; 'jwleduc@utmb.edu' <jwleduc@utmb.edu>; 'Johnson, Robert (OS/ASPR/BARDA)' <Robert.Johnson@hhs.gov>; 'Yeskey, Kevin' <kevin.yeskey@hhs.gov>; 'Disbrow, Gary (OS/ASPR/BARDA)' <Gary.Disbrow@hhs.gov>; 'Redd, John (OS/ASPR/SPPR)' <John.Redd@hhs.gov>; 'Hassell, David (Chris) (OS/ASPR/IO)' <David.Hassell@hhs.gov>; 'Hamel, Joseph (OS/ASPR/IO)' <Joseph.Hamel@hhs.gov>; 'Hanfling, Dan' <DHanfling@iqt.org>; 'Wade, David' <david.wade@hq.dhs.gov>; 'TARANTINO, DAVID A' <david.a.tarantino@cbp.dhs.gov>; 'KAUSHIK, SANGEETA' <sangeeta.kaushik@hq.dhs.gov>; 'Lee, Scott (OS/ASPR/EMMO)' <Scott.Lee@hhs.gov>; 'Larry G' <PadgetLG@state.gov>; 'Ryan Morhard' <Ryan.Morhard@weforum.org>; 'Steven Jt(tCHFStDPH)' <steven.stack@ky.gov>; 'Adams, Jerome (HHS/OASH)' <Jerome.Adams@hhs.gov>; 'Mansoura, Monique K.' <mmansoura@mitre.org>; 'Fantinato, Jessica (USDA.GOV)' <jessica.fantinato@usda.gov>; 'DC' <michelle.colby@usda.gov>; 'danny.shiau@usuhs.edu' <danny.shiau@usuhs.edu>; 'Cordts, Jerome (CTR)' <jerome.cordts@associates.hq.dhs.gov>; 'Schnitzer, Jay J' <jschnitzer@mitre.org>; 'Ignacio, Joselito' <joselito.ignacio@fema.dhs.gov>; 'Will Gaskins' <will.gaskins@efiia.com>; 'Kevin Montgomery' <kevin@collaborate.org>; 'Logan, Linda L' <llogan@cvm.tamu.edu>; 'LLogandakar' <llogandakar@gmail.com>
Subject: RE: Red Dawn Raging Start March 4

Non-UNMC email

Pennsylvania Governor Wolf closes all schools, community centers, gyms, and entertainment venues in Montgomery County due to coronavirus - WPVI

Houston Independent School District, one of the largest in the U.S., closes all schools until March 30 due to coronavirus

So now we have: (1) MD; (2) OH; (3) GA; (4) PA; (5) TX

From:

To: "Dr. Eva K Lee"

Cc: "CHRISTOPHER ALLEN", "Dr. Eva Lee", James V", "jamison.day@gmail.com", "Tom Bossert", Gerald W", "Richard Hatchett",David (DSHS)", Eric", Luciana", "Brian Benson", "Tracey McNamara", "Duane Caneva", Ralph S", Carter (VA.GOV)", Richard (OS/ASPR/EMMO)", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV)", CAMERON",
Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", David", DAVID A", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV)", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "Kevin Montgomery", Linda L", "LLogandakar"

Sent: Thursday March 12 2020 5:34:21PM

Subject: RE: Red Dawn Raging Start March 4

Georgia schools are closing now--Cobb County, Fulton County, Atlanta Public Schools (those are the big ones). I reached out to the superintendent early today and government leaders.

From: "Dr. Eva K Lee"

To: "Carter Mecher"

Cc: "CHRISTOPHER ALLEN", "Dr. Eva Lee", James V", "Tom Bossert", Gerald W", "Richard Hatchett",David (DSHS)", Eric", Luciana", "Brian Benson", "Tracey McNamara", "Duane Caneva", Ralph S", Carter (VA.GOV)", Richard (OS/ASPR/EMMO)", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV)", CAMERON", "r ",tDanielt(OS/ASPR/SPPR)",Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", David", DAVID A", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV)", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "Kevin Montgomery", Linda L", "LLogandakar"

Sent: Thursday March 12 2020 4:43:02PM

Subject: RE: Red Dawn Raging Start March 4

Great, even though it is one step at a time. By the way, I have discovered something uniformally true across all sites -- when we saw the first case, we're exactly 2 weeks behind the disease spread already. It is very interesting. Hence I told David Marcozzi that a single case as a trigger is a good trigger, because that's when you know there're already many "unknown" ones circulating in the community. I saw the patterns now on many cites I think I made that statement already for quite many weeks. But it is interesting to see how beautiful those numbers line up. Oh, I just got off the phone with the Washington Post reporter. She wanted to talk to me a few days ago. Finally she got hold of me. I made a point that it is not one piecemeal action at a time. NPI (schools, workers, worships, events, etc) must be rolled out now so that we can put a brake on and benefit from the full effect. Otherwise, a little here and a little there won't make a dent. She asked me about politicians (who has read my models). I have no idea. Good that I have no head for that and I told her I would like her article to be factual and speak to the American people and also perhaps speak to the leaders too so they can all work together with one common goal -- beat the virus and stay ahead of it instead of chasing aftet it with little batches. Don't know what she would write, but she seems quite interested in the work.

[newton.isye.gatech.edu] [newtonisye.gatech.edu]https://newton.isyegatech.edu/DrLee/
[newton.isye.gatech.edu]

mobile:

Sent with ProtonMail [protonmail.com] Secure Email.

------- Original Message -------

On Thursday, March 12, 2020 4:17 PM, Carter Mecher wrote:

Ohio closing schools.

Ohio schools to close for 3 weeks during coronavirus 'crisis;' Gov. DeWine bans gatherings of more than 100 people

Georgia not mandating but asking districts to consider.

There is no Rupert Blue among any of the Federal leaders. It must come from the states and the Governors.

Sent from Mail [go.microsoft.com] for Windows 10

From: CHRISTOPHER ALLEN

Sent: Thursday, March 12, 2020 3:03 PM

To: Carter Mecher; Dr. Eva Lee; Lawler, James V; jamisonday@gmail.com

Cc: Dr. Eva K Lee; Tom Bossert; Parker Jr, Gerald W; Richard Hatchett; Gruber,David (DSHS); McDonald, Eric; Borio, Luciana; Brian Benson; Tracey McNamara; Duane Caneva; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar

Subject: Re: Red Dawn Raging Start March 4

Eva, Carter, James - All

Understanding that we are in the heat of the battle - wanted to share the attached with the thinking of equating the timing of response (federal/state/local) with economic cost. The ability to model trajectories based on the attached model or perhaps something similar might more fully inform the timing of response activities in order to strike a balance between responding to early vs. responding to late - pro-active data driven decision making vs. reactive.

This model was developed during H1N1 and derived from a varient similarly applied post 911 activities.

Best,

Chris Allen
Chief IT Officer (ret)
Department of Homeland Security
(m)

From: Carter Mecher
Sent: Thursday, March 12, 2020 2:28 PM
To: Dr. Eva Lee <eva.evalee.lee64@ Lawler, James V <james.lawler@unmc.edu>
Cc: Dr. Eva K Lee Tom Bossert Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Borio, Luciana <LBorio@iqt.org>; Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Duane Caneva <duane.caneva@hq.dhs.gov>; Baric, Ralph S <rbaric@email.unc.edu>; Mecher, Carter (VA.GOV) <cartermecher@va.gov>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthewj.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhsgov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhsgov>; Hanfling, Dan <DHanfling@iqt.org>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <davida.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; CHRISTOPHER ALLEN <chrisallen_10(Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar
Subject: RE: Red Dawn Raging Start March 4

[nejm.org] [nejm.org]https://www.nejm.org/doi/full/10.1056/NEJMc2003717?query=RP [nejm.org]

Detection of Covid-19 in Children in Early January 2020 in Wuhan, China

This study showed that Covid-19 occurred in children, causing moderate-to-severe respiratory illness, in the early phase of the SARS-CoV-2 outbreak in Wuhan and was associated with ICU admission in one patient. None of the patients or their family members had had direct exposure to Huanan Seafood Wholesale Market (the initial location to which cases of Covid-19 were linked) or to one another. It is worth mentioning that we unexpectedly found a case of Covid-19 in one patient (Patient 3) who resided outside Wuhan; this patient had illness onset on January 2, 2020. The patient and her family were residents of the Yangxin area of Huangshi and had not traveled outside the city in the month before illness onset. We have not identified the source of infection for this patient. Our findings indicate that SARS-CoV-2 infections in children were occurring early in the epidemic.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Thursday, March 12, 2020 1:53 PM

To: Dr. Eva Lee; Lawler, James V

Cc: Dr. Eva K Lee; Tom Bossert; Parker Jr, Gerald W; Richard Hatchett; Gruber,David (DSHS); McDonald, Eric; Borio, Luciana; Brian Benson; Tracey McNamara; Duane Caneva; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; rjglassjr@gmailcom; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Logan, Linda L; LLogandakar

Subject: RE: Red Dawn Raging Start March 4

On a different note, I realized we were sitting on top of some really useful data in terms hospital lengths of stay. I have been tracking hospital data on Hubei since the beginning. Each day Hubei provides the current number of patients in the hospital (hospital census) with a break down by condition (serious and critical). If I sum the daily hospital census, I have a count of total BDOCs. I can do that for all hospitalized patients and also those who are critical (assuming those represent ICU patients). For the hospitalized patients, I can divide the total BDOCs by the cumulative number of confirmed cases and estimate a hospital LOS (the average is 16 days). The ICU is a bit trickier. I assumed that 5% of the confirmed cases would require ICU care. So divide the total ICU BDOCs by the cumulative confirmed cases multiplied by 5%. The average ICU LOS is 16 days. See below. Eva and Nathaniel, you might to use these numbers. These are probably the best numbers we can find.

	Hul

Date	Total Current Inpatients	Mild Disease	Sever
1/14/20	6		6
1/1 5/2 0	5		5
1/16/20	5		5
1/17/20	8		8
1/18/20	136	10 0	3
1/19/20	170	126	3
1/20/20	239	176	5
1/21/20			
1/22/20	399	304	7

1/23/20	494	365	10
1/24/20	658	472	12
1/25/20	915		22
1/26/20	1,645	1,013	56
1/27/20	2,567	1,877	56
1/28/20	3,349	2,450	67
1/29/20	4,334	3,346	7
1/30/20	5,486	4,392	80
1/31/20	6,738	5,444	9
2/1/20	8,565	7,003	1,1

2/2/20	9,618	7,917	1,2
2/3/20	10,990	8,857	1,5
2/4/20	12,627	10,107	1,8
2/5/20	14,314	11,230	2,3
2/6/20	15,804	11,802	3,1
2/7/20	19,835	14,640	4,1
2/8/20	20,993	15,746	4,0

2/9/20	22,160	16,655	4,2
2/10/20	25,087	18,743	5,0
2/11/20	26,121	18,880	5,7
2/12/20	33,693	26,609	5,6
2/13/20	36,719	27,081	7,9
2/14/20	38,107	27,955	8,2
2/15/20	39,447	29,051	8,4
2/16/20	40,814	31,017	8,0

2/17/20	41,957	30,987	9,1
2/18/20	43,471	32,225	9,2
2/19/20	43,745	32,567	9,1
2/20/20	42,056	31,059	8,9
2/21/20	41,036	30,144	8,4
2/22/20	40,127	29,429	8,8
2/23/20	39,073	29,643	7,7
2/24/20	37,896	29,221	7,0

2/25/20	36,242	27,916	6,8
2/26/20	34,978	26,994	6,5
2/27/20	32,878	25,245	6,2
2/28/20	31,064	23,694	6,0
2/29/20	28,912	21,805	5,8
3/1/20	26,901	20,029	5,6
3/2/20	25,050	18,457	5,4
3/3/20	23,039	16,807	5 0 5
3/4/20	20,765	14,977	4,7

3/5/20	19,758	14,170	4,5
3/6/20	18,518	13,159	4,3
3/7/20	17,078	11,938	4,2
3/8/20	15,826	10,835	4,1
3/9/20	14,957	10,256	3,8
3/10/20	13,712	9,300	3,6
3/11/20	12,769	8,589	3,4
Total BDOCs	1,103,287		
LOS	16		

Sent from Mail [go.microsoft.com] for Windows 10

From: Dr. Eva Lee
Sent: Thursday, March 12, 2020 1:28 PM

To: Lawler, James V

Cc: Carter Mecher; Dr. Eva K Lee; Tom Bossert; Parker Jr, Gerald W; Richard Hatchett; Gruber,David (DSHS); McDonald, Eric; Borio, Luciana; Brian Benson; Tracey McNamara; Duane Caneva; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Logan, Linda L; LLogandakar

Subject: Re: Red Dawn Raging Start March 4

Yes, very very sad -- it's all the planning and we must execute and we can't execute!

On Thu, Mar 12, 2020 at 1:22 PM Lawler, James V <james.lawler@unmc.edu> wrote:

We are making every misstep leaders initially made in table-tops at the outset of pandemic planning in 2006. We had systematically addressed all of these and had a plan that would work – and has worked in Hong Kong/Singapore. We have thrown 15 years of institutional learning out the window and are making decisions based on intuition.

Pilots can tell you what happens when a crew makes decisions based on intuition rather than what their instruments are telling them

And we continue to push the stick forward…

James Lawler, MD, MPH, FIDSA

m:

james.lawler@unmc.edu

From: Carter Mecher
Date: Thursday, March 12, 2020 at 8:08 PM
To: "Dr. Eva K Lee"
Cc: "Lawler, James V" <james.lawler@unmc.edu>, Tom Bossert <tom.bossert@me.com>, "Parker Jr, Gerald W" <gparker@cvm.tamu.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Gruber,David (DSHS)" <David.Gruber@dshs.texas.gov>, "Dr. Eva Lee" <eva.evalee.lee64@ "McDonald, Eric" <Eric.McDonald@sdcounty.ca.gov>, "Borio, Luciana" <LBorio@iqt.org>, Brian Benson <brian.benson@icloud.com>, Tracey McNamara <tmcNamara@westernu.edu>, Duane Caneva <duane.caneva@hq.dhs.gov>, "Baric, Ralph S" <rbaric@email.unc.edu>, "Mecher, Carter (VA.GOV [va.gov])" <carter.mecher@va.gov>, "Hunt, Richard (OS/ASPR/EMMO)" <Richard.Hunt@hhs.gov>, "WILKINSON, THOMAS" <THOMAS.WILKINSON@hq.dhs.gov>, "Callahan, m" <MVCALLAHAN@mgh.harvard.edu>, David <DMarcozzi@som.umaryland.edu>, "Charity A@CDPH" <Charity.Dean@cdph.ca.gov>, Gregory J <MartinGJ@state.gov>, "Walters, William (STATE.GOV

[state.gov])" <walterswa2@state.gov>, "HAMILTON, CAMERON" <cameron.hamilton@hq.dhsgov>, "rjglassjr@gmail.com" <rjglassjr@gmail.com>, "Dodgen,tDanielt(OS/ASPR/SPPR)" <DanielDodgen@hhs.gov>, "DeBord,Kristin (OS/ASPR/SPPR)" <Kristin.DeBord@hhs.gov>, "Phillips, Sally (OS/ASPR/SPPR)" <Sally.Phillips@hhs.gov>, "Matthew J CIV USARMY (USA)" <matthew.j.hepburn.civ@mail.mil>, Lisa Koonin <lkoonin1("HARVEY, MELISSA" <melissa.harvey@hq.dhs.gov>, "WOLFE, HERBERT" <HERBERT.WOLFE@hq.dhs.gov>, "Eastman, Alexander" <alexander.eastman@hq.dhs.gov>, "EVANS, MARIEFRED" <mariefred.evans@associates.hq.dhs.gov>, "jwleduc@utmb.edu" <jwleduc@utmb.edu>, "Johnson, Robert (OS/ASPR/BARDA)" <Robert.Johnson@hhs.gov>, "Yeskey, Kevin" <kevin.yeskey@hhs.gov>, "Disbrow, Gary (OS/ASPR/BARDA)" <Gary.Disbrow@hhs.gov>, "Redd, John (OS/ASPR/SPPR)" <John.Redd@hhs.gov>, "Hassell, David (Chris) (OS/ASPR/IO)" <David.Hassell@hhs.gov>, "Hamel, Joseph (OS/ASPR/IO)" <Joseph.Hamel@hhs.gov>, Dan Hanfling <DHanfling@iqt.org>, "Wade, David" <david.wade@hq.dhs.gov>, "TARANTINO, DAVID A" <david.atarantino@cbp.dhs.gov>, "KAUSHIK, SANGEETA" <sangeeta.kaushik@hq.dhsgov>, "Lee, Scott (OS/ASPR/EMMO)" <Scott.Lee@hhs.gov>, Larry G <PadgetLG@state.gov>, Ryan Morhard <Ryan.Morhard@weforum.org>, "Steven Jt(tCHFStDPH)" <steven.stack@ky.gov>, "Adams, Jerome (HHS/OASH)" <Jerome.Adams@hhs.gov>, "Mansoura, Monique K." <mmansoura@mitre.org>, "Fantinato, Jessica (USDA.GOV [usda.gov])" <jessica.fantinato@usda.gov>, DC <michelle.colby@usda.gov>, "danny.shiau@usuhs.edu" <danny.shiau@usuhs.edu>, "Cordts, Jerome (CTR)" <jerome.cordts@associates.hq.dhs.gov>, "Schnitzer, Jay J" <jschnitzer@mitreorg>, "Ignacio, Joselito" <joselito.ignacio@fema.dhs.gov>, Will Gaskins <will.gaskins@efiia.com>, CHRISTOPHER ALLEN Kevin Montgomery <kevin@collaborate.org>, "Logan, Linda L" <llogan@cvm.tamu.edu>, LLogandakar
Subject: RE: Red Dawn Raging Start March 4

Non-UNMC email

This coming Saturday will mark two weeks since the first death in the US. On Saturday (likely by then we will have ~2,500 cases and 75 deaths given the current trajectory), ask yourself, what do you wish we would have done 2 weeks earlier on Feb 29? I don't think shutting down travel with Europe would have made the list. If you can answer that question truthfully now, then what are we waiting for?

Sent from Mail [go.microsoft.com] for Windows 10

From: Dr. Eva K Lee

Sent: Thursday, March 12, 2020 12:54 PM

To: Carter Mecher

Cc: Lawler, James V; Tom Bossert; Parker Jr, Gerald W; Richard Hatchett; Gruber,David (DSHS); Dr. Eva Lee; McDonald, Eric; Borio, Luciana; Brian Benson; Tracey McNamara; Duane Caneva; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Logan, Linda L; LLogandakar

Subject: RE: Red Dawn Raging Start March 4

Oh, I just heart that DC business is closing and do tele-work, and no church services. Are they not real? And I also heard more governors are "banning" large gatherings. I thought it's in the news. Are they not? I was with a reporter and hence didn't see anything. Some reporters wanted to speak to me on covid-19 models. I didn't agree for a few days but today I have spoken to some. Washington post is going to call me.

I thought everyone has put on a brake, so it's only my imagination? Too bad.

[newton.isye.gatechedu]https://newton.isye.gatech.edu/DrLee/ [newton.isye.gatech.edu] [newton.isye.gatech.edu]
mobile:

Sent with ProtonMail [protonmail.com] Secure Email.

------- Original Message -------
On Thursday, March 12, 2020 12:49 PM, Carter Mecher wrote:

We haven't applied the brakes. We took it off cruise control and that is about it.

Sent from Mail [go.microsoft.com] for Windows 10

From: Dr. Eva K Lee
Sent: Thursday, March 12, 2020 12:45 PM
To: Carter Mecher
Cc: Lawler, James V; Tom Bossert; Parker Jr, Gerald W; Richard Hatchett; Gruber,David (DSHS); Dr. Eva Lee; McDonald, Eric; Borio, Luciana; Brian Benson; Tracey McNamara; Duane Caneva; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Danielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Logan, Linda L; LLogandakar
Subject: RE: Red Dawn Raging Start March 4

yes the brake is on, and that's all good. Healthcare providers are ciritcal to protect them.. We must because those resources are precious and we will need all of them as we see more severe cases But if all brakes are on, we can slow down the infection so we can address the hospital issues.

[urldefensecom] [newton.isye.gatech.edu]https://newton.isye.gatech.edu/DrLee/ [newton.isye.gatech.edu] [newton.isye.gatech.edu]

mobile:

Sent with ProtonMail [protonmail.com] Secure Email.

------- Original Message -------

On Thursday, March 12, 2020 10:14 AM, Carter Mecher wrote:

Good news.

Princess Cruises says it is pausing all operations for 2 months after two of their ships were at the center of coronavirus outbreaks.

I have six kids. My youngest is a senior at UGA. He is home on spring break and UGA announced that school will remain closed until at least April 8th.

My sense is that colleges and universities across the US will be closing down since they do not present the same issues as K-12 (school meals and adult absenteeism related to child minding). There are 19M colleges students in the US—so an important piece. Then add in the employees and staff at colleges who now are working in an effectively socially-distanced workplace. There are nearly 60M kids attending K-12. 17M of those are home schooled (so they are already taken care of). We are having conversations with the private schools (5.8M students). The private schools seem much more amenable to closure and are already doing so. There are 50.6 M kids attending public school K-12. We are shrinking the problem. Has anyone in public health asked a simple question? If you look at state and local government employees, the majority work for education. Any idea what % are high risk (ager>60)? We looked in VA with 400K employees (17% of our employee are age>60). A significantly higher % of our physicians are >60.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Thursday, March 12, 2020 9:02 AM

To: Lawler, James V; Tom Bossert; Parker Jr, Gerald W

Cc: Richard Hatchett; Dr. Eva K Lee; Gruber,David (DSHS); Dr. Eva Lee; McDonald, Eric; Borio, Luciana; Brian Benson; Tracey McNamara; Duane Caneva; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS,

MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Logan, Linda L; LLogandakar

Subject: RE: Red Dawn Raging Start March 4

Attached is the household data. Would ask others to review to doublecheck.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Thursday, March 12, 2020 8:58 AM

To: Lawler, James V; Tom Bossert; Parker Jr, Gerald W

Cc: Richard Hatchett; Dr. Eva K Lee; Gruber,David (DSHS); Dr. Eva Lee; McDonald, Eric; Borio, Luciana; Brian Benson; Tracey McNamara; Duane Caneva; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Logan, Linda L; LLogandakar

Subject: RE: Red Dawn Raging Start March 4

I put all my thoughts together for the defense of school closure. A little long, but I am sharing so that the opponents of school closure understand the arguments they will face if they do not act and it turns out they were terribly wrong.

One statistic that really stuck me as I looked thru the American Survey Data. There are 120 M households in the US. Only 1% of the households in the United States have children and a senior adult present (1.27 M households)

Sent from Mail [go.microsoft.com] for Windows 10

From: Lawler, James V

Sent: Thursday, March 12, 2020 7:34 AM

To: Tom Bossert; Parker Jr, Gerald W

Cc: Richard Hatchett; Carter Mecher; Dr. Eva K Lee; Gruber,David (DSHS); Dr. Eva Lee; McDonald, Eric; Borio, Luciana; Brian Benson; Tracey McNamara; Duane Caneva; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Logan, Linda L; LLogandakar

Subject: Re: Red Dawn Raging Start March 4

Like it Tom. The message is : let's be Singapore and Hong Kong, not Italy. And given the current state of our public health infrastructure we need to implement all NPI in affected communities

James Lawler, MD, MPH, FIDSA

Director, International Programs & Innovation

Global Center for Health Security, and

Associate Professor of Medicine

Division of Infectious Diseases

University of Nebraska Medical Center

m:

james.lawler@unmc.edu

From: Tom Bossert
Sent: Thursday, March 12, 2020 2:08:34 PM
To: Parker Jr, Gerald W <gparker@cvm.tamu.edu>
Cc: Richard Hatchett <richard.hatchett@cepi.net>; Carter Mecher <cmecher@charter.net>; Dr. Eva K Lee Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee <eva.evalee.lee64@gmail.com>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Borio, Luciana <LBorio@iqt.org>; Brian Benson Lawler, James V <james.lawler@unmc.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Duane Caneva <duane.caneva@hq.dhs.gov>; Baric, Ralph S <rbaric@email.unc.edu>; Mecher, Carter (VA.GOV [va.gov]) <carter.mecher@va.gov>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV [state.gov]) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; <rjglassjr@gmail.com>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR)

<KristinDeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevinyeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Hanfling, Dan <DHanfling@iqt.org>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbpdhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV [usda.gov]) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; CHRISTOPHER ALLEN <chrisallen_ Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar <llogandakar@gmail.com>
Subject: Re: Red Dawn Raging Start March 4

Non-UNMC email

We are making great progress. My message today on US TV will be as follows:

•The biggest misunderstanding about #coronavirus interventions is they are an à la carte menu of options to be selectively implemented. This is dead wrong. They ALL must be implemented to achieve a layered effect. Removing any one can defeat all. For instance, close schools AND cancel events.

•There's little value to European travel restrictions. Poor use of time & energy. Earlier, yes. Now, travel restrictions and screening are less useful We have nearly as much disease here in the US as the countries in Europe. We MUST focus on layered community mitigation measures-Now!

-Tom

On Mar 12, 2020, at 12:44 AM, Parker Jr, Gerald W <gparker@cvm.tamu.edu> wrote:

Richard, I will use it tomorrow. Thanks!

Get Outlook for iOS

From: Richard Hatchett <richardhatchett@cepi.net>

Sent: Wednesday, March 11, 2020 23:41

To: Parker Jr, Gerald W

Cc: Tom Bossert; Carter Mecher; Dr. Eva K Lee; Gruber,David (DSHS); Dr. Eva Lee; McDonald, Eric; Borio, Luciana; Brian Benson; Lawler, James V; Tracey McNamara; Duane Caneva; Baric, Ralph S; Mecher, Carter (VA.GOV [va.gov]); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV [state.gov]); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV [usda.gov]); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Logan, Linda L; LLogandakar

Subject: Re: Red Dawn Raging Start March 4

“our communities” and “eyewall” - I hate autocorrect

It is good - people need to have analogies they can relate to. They also need analogies that motivate action and help them understand that THEY must take action. Government won’t save you from a Cat 5 storm, but through our actions we can prevent it from being that. The virus is coming to your community but what it does is up to us.

Sent from my iPhone

On 12 Mar 2020, at 04:34, Parker Jr, Gerald W <gparker@cvm.tamu.edu> wrote:

Richard, thanks. I am trying to think of something that Texans can understand. You would not believe the vitriol locally in the Houston area now that the Houston Rodeo was cancelled. It was a courageous but correct decision. I have an interview with Houston Chronicle tomorrow and may use that analogy. I will also strongly support that local decision.

Get Outlook for iOS

From: Richard Hatchett <richard.hatchett@cepi.net>

Sent: Wednesday, March 11, 2020 11:27 PM

To: Parker Jr, Gerald W

Cc: Tom Bossert; Carter Mecher; Dr. Eva K Lee; Gruber,David (DSHS); Dr. Eva Lee; McDonald, Eric; Borio, Luciana; Brian Benson; Lawler, James V; Tracey McNamara; Duane Caneva; Baric, Ralph S; Mecher, Carter (VA.GOV [va.gov]); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV [state.gov]); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE,

HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV [usda.gov]); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Logan, Linda L; LLogandakar

Subject: Re: Red Dawn Raging Start March 4

Gerry - I thought yesterday about the incoming hurricane analogy as well and think it is a good one. This is a Cat 5 threat to safety that is coming too Jr. communities and fast, and we can either prepare and do the epidemic equivalent of evacuate to safer ground (i.e., TLC/CMG) or take our chances. It's a lot harder to evacuate when the winds are above 100 miles an hour on their way up to 190 at the eyeball.

Sent from my iPhone

On 12 Mar 2020, at 04:16, Parker Jr, Gerald W <gparker@cvm.tamu.edu> wrote:

I do not see it. No use now. I saw it for China. But not now. We should focus on targeted, layered community mitigation measures. Maybe we could use a hurricane analogy that many understand. COVID19 is like a storm coming to our communities, but rather than evacuation or shelter in place orders, the analogous move is community mitigation. At this stage they must be aggressive because we do not have the time luxury of a hurricane in the Atlantic.

Get Outlook for iOS

From: Tom Bossert

Sent: Wednesday, March 11, 2020 23:05

To: Carter Mecher

Cc: Dr. Eva K Lee; Richard Hatchett; Gruber,David (DSHS); Dr. Eva Lee; McDonald, Eric; Borio, Luciana; Brian Benson; Lawler, James V; Tracey McNamara; Duane Caneva; Baric, Ralph S; Mecher, Carter (VAGOV [va.gov]); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV [state.gov]); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV [usda.gov]); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Parker Jr, Gerald W; Logan, Linda L; LLogandakar

Subject: Re: Red Dawn Raging Start March 4

Can anyone justify the European travel restriction, scientifically? Seriously, is there any benefit? I don't see it, but I'm hoping there is something I don't know.

-Tom

On Mar 11, 2020, at 10:51 PM, Carter Mecher wrote:

The US map starting to fill in.

[nytimes.com]https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html [nytimes.com]

Comparison of France, Spain, UK, Germany, US and Italy. Added in the population and dates of first case and first death.

The US is about 2 days behind France and Spain. France and Spain are about 8-9 days behind Italy. I would describe the growth in France, Spain and the US as explosive. Looks to me like we are going to experience an unmitigated Wuhan.

Two weeks from now, what will we wished we had done? I'm going to put that question in a little time capsule, and ask you two weeks from but rephrase it looking back.

Date of 1st Case	24-Jan		1-Feb		24-Jan
Date of 1st Death	15-Feb		4-Mar		5-Mar
	France (65M)		Spain (47M)		UK (68M)
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases
2-Feb	6	0	1	0	2
3-Feb	6	0	1	0	2
4-Feb	6	0	1	0	2
5-Feb	6	0	1	0	2
6-Feb	6	0	1	0	2

7-Feb	6	0	1	0	3
8-Feb	6	0	1	0	3
9-Feb	11	0	2	0	4
10-Feb	11	0	2	0	8
11-Feb	11	0	2	0	9
12-Feb	11	0	2	0	9
13-Feb	11	0	2	0	9
14-Feb	11	0	2	0	9

15-Feb	12	1	2	0	9
16-Feb	12	1	2	0	9
17-Feb	12	1	2	0	9
18-Feb	12	1	2	0	9
19-Feb	12	1	2	0	9
20-Feb	12	1	2	0	9
21-Feb	12	1	2	0	9
22-Feb	12	1	2	0	9
23-Feb	12	1	2	0	13
24-Feb	12	1	3	0	13
25-Feb	14	1	7	0	13

26-Feb	18	2	13	0	13
27-Feb	38	2	23	0	16
28-Feb	57	2	32	0	20
29-Feb	100	2	45	0	23
1-Mar	130	2	84	0	36
2-Mar	191	3	120	0	40
3-Mar	212	4	151	0	51
4-Mar	285	4	202	0	85
5-Mar	423	7	248	1	116
6-Mar	613	9	517	10	164

7-Mar	949	16	613	17	184
8-Mar	1,126	19	848	25	280
9-Mar	1,412	30	1,231	30	324
10-Mar	1,784	33	1,646	35	382
11-Mar	2,281	49	2,277	55	456

Sent from Mail for Windows 10

From: Tom Bossert

Sent: Wednesday, March 11, 2020 10:05 PM

To: Dr. Eva K Lee

Cc: Richard Hatchett; Gruber,David (DSHS); Dr. Eva Lee; McDonald, Eric; Borio, Luciana; Brian Benson; Lawler, James V; Tracey McNamara; Duane Caneva; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmbedu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhsedu;

Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Parker Jr, Gerald W; Logan, Linda L; LLogandakar

Subject: Re: Red Dawn Raging Start March 4

Well, I give the president credit for changing his tone and making Americans know this is very serious. By all other metrics, it was a combination of gibberish, unnecessary steps, and insufficient detail. We still have a lot of work ahead of us team.

-Tom

On Mar 11, 2020, at 2:47 PM, Dr. Eva K Lee wrote:

Three notes: [[It's about winning time.]]

1. Here's German Chancellor Angela Merkel's comments. My German advisor is the scientific advisor to Angela. He told me Angela loves mathematics and can understand all my math graphs very well. Here's her comment:

"The process has to be focused on not overburdening the health system by slowing the virus's spread … It's about winning time,"

[nypost.com]https://nypost.com/2020/03/11/angela-merkel-warns-that-70-of-germans-could-get-coronavirus/ [nypostcom]

She's already been criticized for not acting / speaking in public. But Germany was able to hold out very well until Italy's fire spreads to every country in Euripe.

2. DC colleagues: Please tele-work, please protect yourself and thus protect the government business continuity. Remember one case is one too many -- because there're all the other hidden cases you won't see. David M's asked to analyze Baltimore with not-yet-a-recorded-case scenario, That is a good model system to view. It can be applied to all cities. You can see the benefits of tele-work even if only 50% participate. King's county did not start with one case on Feb 23 in the nursing home, it had at least 5 a week earlier(from my inverse optimization analysis). 3 nursing homes were under attack. Perhaps there's a meeting with elderly caretakers and these individuals got infected at that meeting and carried with them to their respective nursing homes.

I have tons of graphs and some specific to DC. I will add them onto the NPI analaysis file and send them.

3. I was on local public health COVID-19 call this morning. One jurisdiction accuses another jurisdiction of overreacting -- that's Fulton county school closing due to a positive case of a teacher (as Carter reported). Other jurisdictions did not like that and felt Fulton overracted. Yes, school closure remains very critical, so is tele-work, online large-scale gathering instead of in person etc.. and yes, please rapid screening. And I will send around some hospital resources optimization soon.

[newton.isye.gatech.edu]https://newtonisye.gatech.edu/DrLee/ [newton.isye.gatech.edu]
mobile:

Sent with ProtonMail Secure Email.

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On Wednesday, March 11, 2020 12:15 PM, wrote:

I notice a lot of HHS email addresses on this email and group and you all have been quiet for most of the discussion over the paste several weeks. I would urge you to read the article I just sent out and uprief your boss. This is the key message that they need to hear and they have little time left to act.

1. Don't misunderstand what happened in China and what has happened in Hong Kong and Singapore. COVID doesn't fade away on its own. The reason is receded in China is because of extraordinary efforts. You can read the WHO report: [who.int]https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf [who.int]

2. South Korea has done an extraordinary effort to test its ciizens (more than 222,000 tested to date). South Korea has a population of 51M. An equivalent effort in the US would equal 1.4 M tested. How many have we tested in the US to date?

3. Italy is really struggling right now and time will tell if their extraordinary efforts they now are employing will mitigate the outbreak. A lot of eyes are watching and hoping they are successful.

4. The US (along with most of Europe) is less than 2 weeks behind Italy. We should be learning from the experiences of China, Hong Kong, Singapore, South Korea and Italy. If we fail to learn from them, we do so at our peril. History will long remember what we do and what we don't do at this critical moment. It is the time to act, and it is past the time to remain silent This outbreak isn't going to magically disappear on its own. If that is the conclusion some are taking, they are misinformed and dead wrong.

From: cmecher@charter.net

To: "cmecher@charter.net"

Cc: "Richard Hatchett",David (DSHS)", "Dr. Eva K Lee", "Dr. Eva Lee", Eric", Luciana", "Brian Benson", James V", "Tracey McNamara", "Duane Caneva", "Tom Bossert", Ralph S", Carter (VA.GOV [va.gov])", Richard (OS/ASPR/EMMO)", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV [state.gov])", CAMERON", Daniel (OS/ASPR/SPPR)",Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", David", DAVID A", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [usda.gov])", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery", Gerald W", Linda L", "LLogandakar"

Sent: Wednesday March 11 2020 11:56:57AM

Subject: Re: Red Dawn Raging Start March 4

Everyone should read the article I sent. This is the first person I have seen wriyte about forecasting. What happened to forecasting Matt? THIS IS FORECASTING.

From: cmecher@charter.net

To: "cmecher@charter.net"

Cc: "Richard Hatchett",David (DSHS)", "Dr. Eva K Lee", "Dr. Eva Lee", Eric", Luciana", "Brian Benson", James V", "Tracey McNamara", "Duane Caneva", "Tom Bossert", Ralph S", Carter (VA.GOV [va.gov])", Richard (OS/ASPR/EMMO)", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV [state.gov])", CAMERON", Daniel (OS/ASPR/SPPR)",Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", David", DAVID A", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan

Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [usda.gov])", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery", Gerald W", Linda L", "LLogandakar"

Sent: Wednesday March 11 2020 11:47:38AM

Subject: Re: Red Dawn Raging Start March 4

Another good article.

[medium.com]https://medium.com/@tomaspueyo/coronavirus-act-today-or-people-will-die-f4d3d9cd99ca [medium.com]

From:

To:

Cc: "Richard Hatchett",David (DSHS)", "Dr. Eva K Lee", "Dr. Eva Lee", Eric", Luciana", "Brian Benson", James V", "Tracey McNamara", "Duane Caneva", "Tom Bossert", Ralph S", Carter (VA.GOV [va.gov])", Richard (OS/ASPR/EMMO)", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV [state.gov])", CAMERON", Daniel (OS/ASPR/SPPR)",Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", David", DAVID A", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [usda.gov])", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery", Gerald W", Linda L", "LLogandakar"

Sent: Wednesday March 11 2020 8:21:18AM

Subject: Re: Red Dawn Raging Start March 4

Japan's NIID published a new report on their website. [niid.go.jp]https://www.niid.go.jp/niid/en/2019-ncov-e.html [niid.go.jp]

I have been monitoring this site since this is where the review of the Diamond Princess passengers was published. They looked at their first 112 lab confirmed cases (including 72 cases from the Diamond Princess0. I wish they just looked at the diamond Princess cases separately, but it is what it is.

I pasted the key information into slides. Interesting info re ICU care.

From:

To: "Richard Hatchett"

Cc: David (DSHS)", "Dr. Eva K Lee", "Dr. Eva Lee", Eric", Luciana", "Brian Benson", James V", "Tracey McNamara", "Duane Caneva", "Tom Bossert", Ralph S", Carter (VA.GOV [va.gov])", Richard (OS/ASPR/EMMO)", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV [state.gov])", CAMERON", "rjglassjr@gmail.com", Daniel (OS/ASPR/SPPR)",Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", David", DAVID A", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDAGOV)", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery", Gerald W", Linda L", "LLogandakar"

Sent: Wednesday March 11 2020 7:00:54AM

Subject: Re: Red Dawn Raging Start March 4

Key line.

In the coming days, thousands of people across the country will face the choice between becoming a Wilmer Krusen or a Max Starkloff.

I would add another--we need a Rupert Blue (his equivalent has been MIA).

From: "Richard Hatchett"

To:

Cc: David (DSHS)", "Dr. Eva K Lee", "Dr. Eva Lee", Eric", Luciana", "Brian Benson", James V", "Tracey McNamara", "Duane Caneva", "Tom Bossert", Ralph S", Carter (VA.GOV [va.gov])", Richard (OS/ASPR/EMMO)", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV [state.gov])", CAMERON", "rjglassjr@gmail.com", Daniel (OS/ASPR/SPPR)",Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", David", DAVID A", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [usda.gov])", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery", Gerald W", Linda L", "LLogandakar"

Sent: Wednesday March 11 2020 6:43:54AM

Subject: Re: Red Dawn Raging Start March 4

Another:

[theatlantic.com]https://www.theatlantic.com/ideas/archive/2020/03/coronavirus-cancel-everything/607675/ [theatlantic.com]

Sent from my iPhone

On 11 Mar 2020, at 10:42, ______________ ______________ wrote:

Good article--flattening the curve.

[statnews.com]https://www.statnews.com/2020/03/11/flattening-curve-coronavirus/ [statnews.com]

From: "Richard Hatchett"

To: "Carter Mecher"

Cc: David (DSHS)", "Dr. Eva K Lee", "Dr. Eva Lee", Eric", Luciana", "Brian Benson", James V", "Tracey McNamara", "Duane Caneva", "Tom Bossert", Ralph S", Carter (VA.GOV [va.gov])", Richard (OS/ASPR/EMMO)", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV [state.gov])", CAMERON", "rjglassjr@gmail.com", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", David", DAVID A", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [usda.gov])", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery", Gerald W", Linda L", "LLogandakar"

Sent: Wednesday March 11 2020 3:33:33AM

Subject: Re: Red Dawn Raging Start March 4

On the topic of cities continuing their St Patrick's Day parades -

[inquirer.com]https://www.inquirer.com/health/coronavirus/coronavirus-st-patricks-day-parade-philadelphia-20200310.html [inquirer.com]

Can we treat these like closed sporting events and just televise them? Parades without crowds?

Having the parades right now is whatever the social equivalent of suicide is.

Sent from my iPhone

On 10 Mar 2020, at 19:27, Carter Mecher wrote:

I saw that Jamaica just confirmed a case. The traveler was from the UK. The UK currently has 324 confirmed cases. Suspect the prevalence is much higher in the UK than these numbers would suggest given we have now seen disease in a traveler from the UK.

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Tuesday, March 10, 2020 3:01 PM

To: Gruber,David (DSHS); Dr. Eva K Lee

Cc: Dr. Eva Lee; McDonald, Eric; Borio, Luciana; Brian Benson; Lawler, James V; Tracey McNamara; Duane Caneva; Tom Bossert; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); Richard Hatchett; WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Parker Jr, Gerald W; Logan, Linda L; LLogandakar

Subject: RE: Red Dawn Raging Start March 4

Italy is about where Hubei was on Feb 2. Feb 2 was day 62 on the graph below. Imagine that. The question is whether Italy retraces Hubei or Wuhan? That means we are at about day 50 or so.

<B5B96EDAA5B54CFAAAD14BD37A08490C.png>

Sent from Mail for Windows 10

From: Gruber,David (DSHS)

Sent: Tuesday, March 10, 2020 2:03 PM

To: Carter Mecher; Dr. Eva K Lee

Cc: Dr. Eva Lee; McDonald, Eric; Borio, Luciana; Brian Benson; Lawler, James V; Tracey McNamara; Duane Caneva; Tom Bossert; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); Richard Hatchett; WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; [redacted] Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee,

Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Parker Jr, Gerald W; Logan, Linda L; LLogandakar

Subject: Re: Red Dawn Raging Start March 4

Another strategic approach to looking at the situation.

Applying the, "Adano Principles" to manage an adversity such as COVID19:

1. Recognition and acknowledgement of the existence or potential of an adversity
2. Identifying the specific characteristics of the adverse environment
3. Applying a network centric/systems approach to countering the adversity to include development of process and associated metrics that define success points and end-state
4. Incorporating continuous analysis and quality improvement to maintain progress and prevent reversion from success
5. Recognition of when the adversity is neutralized or eliminated to allow for return to baseline operations

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<FE99E766A4C74518B1F532B396C3EF47.png>

From: Carter Mecher
Sent: Tuesday, March 10, 2020 12:52:56 PM
To: Dr. Eva K Lee <evalee-gatech@pm.me>
Cc: Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee <eva.evalee.lee64@gmail.com>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Borio, Luciana <LBorio@iqt.org>; Brian Benson Lawler, James V <james.lawler@unmc.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Duane Caneva <duane.caneva@hq.dhs.gov>; Tom Bossert Baric, Ralph S <rbaric@email.unc.edu>; Mecher, Carter (VA.GOV [va.gov]) <carter.mecher@va.gov>; Hunt, Richard (OS/ASPR/EMMO) <RichardHunt@hhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; Charity A@CDPH <CharityDean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV [state.gov]) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmailcom <rjglassjr@gmailcom>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhsgov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Hanfling, Dan <DHanfling@iqt.org>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK,

SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhsgov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV [usda.gov]) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; CHRISTOPHER ALLEN <chrisallen Kevin Montgomery <kevin@collaborate.org>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar

Subject: RE: Red Dawn Raging Start March 4

I see that NJ just announced its first death (man in his 60s). Don't know the details but if this is not a travel related case, they ought to be ready to implement NPIs.

NY Governor announced need for school closures in New Rochelle (NY is now up to 173 cases with 31 new cases announced today). The superintendent does not agree.

disagrees/ar-BB10X67F

Sent from Mail for Windows 10

From: Dr. Eva K Lee

Sent: Tuesday, March 10, 2020 1:46 PM

To: Carter Mecher

Cc: Gruber,David (DSHS); Dr. Eva Lee; McDonald, Eric; Borio, Luciana; Brian Benson; Lawler, James V; Tracey McNamara; Duane Caneva; Tom Bossert; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); Richard Hatchett; WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Parker Jr, Gerald W; Logan, Linda L; LLogandakar

Subject: RE: Red Dawn Raging Start March 4

Europe gives me an extraordinary good example. Germany held out really well when it was infected from the one Chinese subject. But the few cases and very mild nature allowed healthcare to contain them in no time.

With Italy so well-connected to all its neighbours, it viral spread triggers a radial cascading effect that is another text-book example. We are just like Europe in terms of connectivity by air (and less by trains). We

may be a little slower because of our normal distance from each other. But if you go to any university or any school, you will notice everyone packs together and intertwines so tightly.

Churches, synagogues, mosques, temples, we need to encourage the worshippers to do all these onlines. These sites have high percentage of volunerable populations, we need to spread the words. I think the religious leaders can take the lead.

evalee-gatech@pmme

[newton.isye.gatech.edu]https://newton.isye.gatech.edu/DrLee/ [newton.isye.gatech.edu]
mobile:

Sent with ProtonMail Secure Email.

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On Tuesday, March 10, 2020 1:18 PM, Carter Mecher <cmecher@charternet> wrote:

More data for forecasting. We compiled the daily numbers for a few hot spots. Looks like Spain is about 8 days behind Italy, France is about 9 days behind Italy, and we are about 10 days behind Italy. Europe (France, Spain, Italy, and then Germany and the UK) is going to be hit hard about the same time we are. That ESICM letter that Richard shared from Italy [esicm.org]https://www.esicm.org/covid-19-update-from-our-colleagues-in-northern-italy/ [esicm.org] was dated March 4th (that was already 6 days ago) Next week looks to be pretty bad, with things getting exponentially worse beyond that time. It will be important to follow Italy to have at least a 7-10 day lead on what to expect. Do we have DOD or State sources in Italy to monitor (assume they must be following closely)?

Date of 1st Case	24-Jan		1-Feb		2
Date of 1st Death	15-Feb		4-Mar		5
	France		Spain		
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases
2-Feb	6	0	1	0	2
3-Feb	6	0	1	0	2

4-Feb	6	0	1	0	2
5-Feb	6	0	1	0	2
6-Feb	6	0	1	0	2
7-Feb	6	0	1	0	3
8-Feb	6	0	1	0	3
9-Feb	11	0	2	0	4
10-Feb	11	0	2	0	8
11-Feb	11	0	2	0	9

12-Feb	11	0	2	0	9
13-Feb	11	0	2	0	9
14-Feb	11	0	2	0	9
15-Feb	12	1	2	0	9
16-Feb	12	1	2	0	9
17-Feb	12	1	2	0	9
18-Feb	12	1	2	0	9
19-Feb	12	1	2	0	9
20-Feb	12	1	2	0	9
21-Feb	12	1	2	0	9

22-Feb	12	1	2	0	9
23-Feb	12	1	2	0	13
24-Feb	12	1	3	0	13
25-Feb	14	1	7	0	13
26-Feb	18	2	13	0	13
27-Feb	38	2	23	0	16
28-Feb	57	2	32	0	20
29-Feb	100	2	45	0	23
1-Mar	130	2	84	0	36
2-Mar	191	3	120	0	40

3-Mar	212	4	151	0	51
4-Mar	285	4	202	0	85
5-Mar	423	7	248	1	116
6-Mar	613	9	296	1	164
7-Mar	949	16	589	17	184
8-Mar	1,126	19	1,204	28	280
9-Mar	1,412	30	1,646	35	324
10-Mar					

Sent from Mail for Windows 10

From: Carter Mecher
Sent: Tuesday, March 10, 2020 10:30 AM
To: Gruber,David (DSHS); Dr. Eva Lee; McDonald, Eric
Cc: Borio, Luciana; Brian Benson; Lawler, James V; Tracey McNamara; Duane Caneva; Dr. Eva K Lee; Tom Bossert; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); Richard Hatchett; WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmbedu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Parker Jr, Gerald W; Logan, Linda L; LLogandakar

Subject: RE: Red Dawn Raging Start March 4

Back in 2007, there was modeling for estimating the economic impact of a pandemic (unmitigated with no NPIs) and a mitigated pandemic plus the costs of NPIs. I can see if I can dig that up. The bottom line is that when you add in the cost associated with lives lost in an unmitigated pandemic, additional healthcare costs due to greater numbers of those who are ill and hospitalized, economic costs due to lost productivity due to increased illness, the NPI costs pale in comparison I will see what additional info I can find to help you.

I'm listening to the arguments for not closing schools: (1) kids may not be important in disease transmission and when kids do become infected, their illness is mild; (2) closing schools is too disruptive, it will require parents to stay home from work to mind their children (and this absenteeism could adversely impact critical sectors such as healthcare); (3) large number of kids depend upon school meals and the closure of schools could have serious consequences; (4) by keeping kids home, they have more time to be around older adults in the household and potentially transmit disease to more vulnerable groups (the thinking is that it would be safer to keep them at school for at least 8 hrs of the day to decrease contact time with older adults in the household); and (5) kids will just mix again the community (that kids will "hang out at malls").

Just something to think about.

Schools are closing now for 1 week for spring break (many this week and some in the next week or two). This is happening at a critical point of the acceleration of this outbreak in the US. In the next couple of weeks our healthcare system is likely to be stressed. A good number of parents take time off over spring break to be with their kids (many times both parents for two parent households). Below is a graph of annual leave usage rates in VA It is very consistent from year to year (looks a lot like an EKG tracing. You see a spike at Thanksgiving, another huge spike round Christmas/New Years, another small bump in the spring (spring break), and another broad bump (that looks like a T wave on an EKG) in the summer months when families tend to take vacations (because kids are out of school).

Given the argument of those opposed to closing schools, should we cancel spring break and keep the schools open so that parents don't have to stay home to mind their kids at this particularly vulnerable time when our healthcare system is about to be hammered? Should we also keep the schools open so that kids are kept away from older adults in the household for much of the day during this period of acceleration? That is pretty much the extension of illogical logic.

We close schools for 1 week for spring break and the world does not fall apart. The nutrition of children does not suffer. Do we think if schools closed for two weeks, that the world would come crashing down? Why not close for two weeks and then reassess (at least it gives us time). We can never get that time back.

Last thing. Many of you have kids, do any of them hang out at malls? In my neighborhood I don't even see kids outside—they are all inside texting, on Instagram, playing games with their friends online or whatever they do these days. Hardly see them riding their bikes around. I understand that "going to the mall" is code for kids re-congregating outside of school Even if they do they are in a less socially dense environment and in much smaller groups. The whole school doesn't all go together anywhere, except to school.

Sent from Mail for Windows 10

From: Gruber,David (DSHS)

Sent: Tuesday, March 10, 2020 9:58 AM

To: Dr. Eva Lee; McDonald, Eric

Cc: Carter Mecher; Borio, Luciana; Brian Benson; Lawler, James V; Tracey McNamara; Duane Caneva; Dr. Eva K Lee; Tom Bossert; Baric, Ralph S; Mecher, Carter (VA.GOV); Hunt, Richard (OS/ASPR/EMMO); Richard Hatchett; WILKINSON, THOMAS; M.D.; David; Charity A@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Hanfling, Dan; Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J; Ignacio, Joselito; Will Gaskins; CHRISTOPHER ALLEN; Kevin Montgomery; Parker Jr, Gerald W; Logan, Linda L; LLogandakar

Subject: RE: Red Dawn Raging Start March 4

As a state public health official who is in agreement that NPIs must be strongly enacted early; I'm looking for help from this group to find tools that make the case for NPIs. The target audience is those outside of health.

I'm attaching an example slide (admittedly and intentionally rudimentary) that might be used to support this argument and explain the totality of NPIs. Do others see this as something that might aid in influencing and, if so, are there data sources that I might tap into showing the impacts of NPIs directly on epi curves and how these NPIs would impact other community foundations?

Thanks
Dave

From: Dr. Eva Lee <eva.evalee.lee64@gmail.com>

Sent: Saturday, March 7, 2020 8:53 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>

Cc: Carter Mecher Borio, Luciana <LBorio@iqt.org>; Brian Benson Lawler, James V <james.lawler@unmc.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Duane Caneva <duane.caneva@hq.dhs.gov>; Dr. Eva K Lee <evalee-

gatech@pm.me>; Tom Bossert <tom.bossert@mecom>; Baric, Ralph S <rbaric@email.unc.edu>; Mecher, Carter (VA.GOV [va.gov]) <carter.mecher@va.gov>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; MD. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV [state.gov]) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@ HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhsgov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Hanfling, Dan <DHanfling@iqt.org>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitreorg>; Fantinato, Jessica (USDA.GOV [usda.gov]) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jeromecordts@associates.hq.dhs.gov>; Schnitzer, Jay J <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <willgaskins@efiia.com>; CHRISTOPHER ALLEN <chrisallen_ Kevin Montgomery <kevin@collaborate.org>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar <llogandakar@

Subject: Re: Red Dawn Raging Start March 4

WARNING: This email is from outside the HHS system Do not click on links or attachments unless you expect them from the sender and know the content is safe.

I assume the WHO test kit protocol used by other parts of the world won't be used by US (or accepted by FDA/CDC). Yes, we have talked about testing bottleneck since January. Can't say more.

This may be of interest from BBC.

Coronavirus: Northern Italy to quarantine 16 million people

[bbc.com]https://www.bbc.com/news/world-middle-east-51787238 [bbc.com]

On Sat, Mar 7, 2020 at 9:30 PM McDonald, Eric <Eric.McDonald@sdcounty.ca.gov> wrote:

> The long pole in the tent is testing capacity...without going into why it could possibly take so long to field tests in this country when others seem to be able to do it, at the operational level, if you only have limited access to testing, triage needs to occur. So hindsight criticism of providers using the criteria they had/have on

patients who did not meet these criteria and then were found to be positive is not useful in my view. Agree the opportunity was missed, but they are being missed now and will be missed until the promised million plus tests are actually fielded and results obtained in an actionable timeframe.

Whatever is going on/went on between cdc and fda and the laboratory community that created this delay will be dissected by someone in the future, but it still is not fixed for us to be able to do what others countries have done or for me as a local public health official to get vital data on what is really going on.

Frustrating doesn't capture it. You know what I am saying.

Eric

Sent from my iPhone

On Mar 7, 2020, at 5:42 PM, Dr. Eva Lee <eva.evalee. wrote:

How are our testing kits? Do we have the test kits and the throughput power now? This is yet another miss opportunity - about a covid-19 case in Georgia. Is it true that tests are only conducted on patients which satisfy the CDC criteria? The symptoms are so diverse that we can't be fixed to a set of guidelines. We need broader screening, that is a must.

"The third case involved a 46-year-old female went who went to a hospital in Rome (Georgia) complaining of flu-like symptoms. Hospital officials said she didn't meet the Centers for Disease Control and Prevention (CDC) and GDPH criteria for COVID-19 testing, so she was treated and released. After she began to feel worse, the woman was eventually tested. The test has now confirmed that she has COVID-9. Officials say she has been hospitalized."

On Sat, Mar 7, 2020 at 8:19 PM wrote:

I think this is the first time a traveler from the US is confirmed as the first case in another country.

Costa Rica confirms first case of coronavirus

By Free Press March 6, 2020 - 15:37 HS

Costa Rica confirmed on March 6 the first case of covid-19 in his country, the first also in Central America.

Costa Rican health authorities report in a press conference the first confirmed case of covid-19.

The infected patient is a 49-year-old woman, an American tourist, who is isolated in the capital San José.

In addition, there is another patient, the woman's husband, whose case is "highly suspicious," health minister Daniel Salas told a news conference.

According to official information, it was the husband who had direct contact with a positive covid-14 patient in New York before arriving in Costa Rica. Both patients are stable.

The couple arrived in Costa Rica on March 1, recently visited Puntarenas and Alajuela, and had contact with at least five people, which are sought by the authorities to evaluate them.

From: ____________________

To: "cmecher@charter.net"

Cc: Luciana", "Brian Benson", James V", "Tracey McNamara", "Duane Caneva", "Dr. Eva Lee", "Dr. Eva K Lee", "Tom Bossert", Ralph S", Carter (VA.GOV)", Richard (OS/ASPR/EMMO)", "Richard Hatchett", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV)", CAMERON", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV)", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery", Gerald W", Linda L", "LLogandakar"

Sent: Saturday March 7 2020 7:20:09PM

Subject: Re: Red Dawn Raging Start March 4

Now compare to US.

Error! Filename not specified.

I aligned the US and Italy at the points where both identified their first death (see attached). A better comparison would have been to exclude the Diamond Princess cases (46 cases) from the cumulative case numbers. Also, the rapid growth in the numbers of deaths has been associated with the cluster at the LifeCare facility. Just someting to follow over the next several days.

From: cmecher@charter.net

To: Luciana"

Cc: "Brian Benson", James V", "Tracey McNamara", "Duane Caneva", "Dr. Eva Lee", "Dr. Eva K Lee", "Tom Bossert", Ralph S", Carter (VA.GOV)", Richard (OS/ASPR/EMMO)", "Richard Hatchett", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV)", CAMERON", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV)", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery", Gerald W", Linda L", "LLogandakar"

Sent: Saturday March 7 2020 6:34:21PM

Subject: Re: Red Dawn Raging Start March 4

Will let the virus experts comment on weather. The data for Hong Kong is below.

Error! Filename not specified.

The weather forecast right now in Hong Kong (highs in the 60s and 70s) is definitiely cooler than Singapore. The HK weather is similar to Southern California. So we can compare how the virus behaves in LA and in HK.

From: "Borio, Luciana"

To: "cmecher@charter.net"

Cc: "Brian Benson", James V", "Tracey McNamara", "Duane Caneva", "Dr. Eva Lee", "Dr. Eva K Lee", "Tom Bossert", Ralph S", Carter (VA.GOV)", Richard (OS/ASPR/EMMO)", "Richard Hatchett", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV)", CAMERON", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV)", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery", Gerald W", Linda L", "LLogandakar"

Sent: Saturday March 7 2020 4:09:04PM

Subject: Re: Red Dawn Raging Start March 4

Could this be explained, at least in part, by Singapore's weather? I don't know how one could assess the relative contribution of public health measures/NPIs and weather, but curious to know what is your assessment?

Sent from my iPhone

On Mar 7, 2020, at 12:13 PM, wrote:

Singapore still holding the line. Linear growth--meaning an Ro close to 1. That is a remarkable achievment over a span of 6-7 weeks. What they are doing is working.

Error! Filename not specified.

Error! Filename not specified.

From: cmecher@charter.net

To:

Cc: "Brian Benson", James V", Luciana", "Tracey McNamara", "Duane Caneva", "Dr. Eva Lee", "Dr. Eva K Lee", "Tom Bossert", Ralph S", Carter (VA.GOV)", Richard (OS/ASPR/EMMO)", "Richard Hatchett", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV)", CAMERON", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV)", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery", Gerald W", Linda L", "LLogandakar"

Sent: Saturday March 7 2020 9:03:49AM

Subject: Re: Red Dawn Raging Start March 4

Attached is the flu surveillance data for week 9 for Hong Kong, South Korea, US, and several high risk states and cities. Only NYC and LA data is not available for week 9 yet. Washington state data seems a little odd.

From:

To: "Brian Benson"

Cc: James V", Luciana", "Tracey McNamara", "Duane Caneva", "Dr. Eva Lee", "Dr. Eva K Lee", "Tom Bossert", Ralph S", Carter (VA.GOV)", Richard (OS/ASPR/EMMO)", "Richard Hatchett", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV)", CAMERON", "r Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV)", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery", Gerald W", Linda L", "LLogandakar"

Sent: Saturday March 7 2020 7:24:25AM

Subject: Re: Red Dawn Raging Start March 4

The outbreak in the US is looking more like Italy but without the aggressive actions [including cordon sanitaire of 50,000 people, closing schools and universites, and canceling mass gatherings] taken by Italy as soon as they identified their first death. I pulled the numbers of cases and deaths reported by the media at the end of each (so data for today is preliminary/morning data).

Interesting to compare the two countries and align the outbreaks (4th slide by the date of first reported death). The US cases include the Princess Diamond cases of repatriated passengers as well as Americans evacuated from Wuhan. I was unable to estimate the number of tests performed by Italy compared to the US. The US case count sems to be lagging what Italy observed. The US appears to be about a week behind Italy. Time will tell.

From: "Brian Benson"

To: James V"

Cc: Luciana", "Tracey McNamara", "Duane Caneva", "Dr. Eva Lee", "Carter Mecher", "Dr. Eva K Lee", "Tom Bossert", Ralph S", Carter (VA.GOV)", Richard (OS/ASPR/EMMO)", "Richard Hatchett", THOMAS", "M.D.", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV)", CAMERON", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV)", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)",

Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery", Gerald W", Linda L", "LLogandakar"

Sent: Saturday March 7 2020 7:11:49AM

Subject: Re: Red Dawn Raging Start March 4

Good morning all, conversations are very helpful. Who out there is working on a clinical prediction tool? Let me know, I'd sure like to help.

On Mar 6, 2020, at 11:50 PM, Lawler, James V <james.lawler@unmc.edu> wrote:

Well, we appear to have a third enrollee. Maybe that will be the tie-breaker.

James Lawler, MD, MPH, FIDSA

Executive Director, International Programs & Innovation

Global Center for Health Security, and

Associate Professor of Medicine

Division of Infectious Diseases

University of Nebraska Medical Center

m:

james.lawler@unmcedu

From: "Borio, Luciana" <LBorio@iqt.org>
Date: Friday, March 6, 2020 at 7:04 PM
To: Tracey McNamara <tmcNamara@westernu.edu>
Cc: "Caneva, Duane" <duane.caneva@hq.dhs.gov>, "Dr. Eva Lee" <eva.evalee.lee64@gmailcom>, Carter Mecher "Dr. Eva K Lee" Tom Bossert "Baric, Ralph S" <rbaric@email.unc.edu>, Brian Benson <brian. "Mecher, Carter (VA.GOV [gcc01.safelinks.protection.outlook.com])" <carter.mecher@va.gov>, "Hunt, Richard (OS/ASPR/EMMO)" <Richard.Hunt@hhs.gov>, Richard Hatchett <richard.hatchett@cepi.net>, "WILKINSON, THOMAS" <THOMAS.WILKINSON@hq.dhs.gov>, "Callahan, m." <MVCALLAHAN@mgh.harvard.edu>, "Lawler, James V" <james.lawler@unmc.edu>, David <DMarcozzi@som.umarylandedu>, "Charity A@CDPH" <CharityDean@cdph.ca.gov>, Gregory J <MartinGJ@state.gov>, "Walters, William (STATE.GOV [gcc01.safelinks <walterswa2@state.gov>, "HAMILTON, CAMERON" <cameron.hamilton@hq.dhs.gov>, "rjglassjr@gmail.com" "Dodgen, Daniel (OS/ASPR/SPPR)" <Daniel.Dodgen@hhs.gov>, "DeBord, Kristin (OS/ASPR/SPPR)" <Kristin.DeBord@hhsgov>, "Phillips, Sally (OS/ASPR/SPPR)" <Sally.Phillips@hhs.gov>, "Matthew J CIV USARMY (USA)" <matthew.j.hepburn.civ@mail.mil>, Lisa Koonin <lkoonin1 "HARVEY, MELISSA" <melissa.harvey@hq.dhs.gov>, "WOLFE, HERBERT" <HERBERT.WOLFE@hq.dhs.gov>, "Eastman, Alexander" <alexander.eastman@hq.dhs.gov>, "EVANS, MARIEFRED" <mariefred.evans@associates.hq.dhs.gov>, "jwleduc@utmb.edu" <jwleduc@utmb.edu>, "Johnson, Robert (OS/ASPR/BARDA)" <Robert.Johnson@hhs.gov>, "Yeskey, Kevin" <kevinyeskey@hhs.gov>, "Disbrow, Gary (OS/ASPR/BARDA)" <Gary.Disbrow@hhs.gov>, "Redd, John

(OS/ASPR/SPPR)" <John.Redd@hhs.gov>, "Hassell, David (Chris) (OS/ASPR/IO)" <David.Hassell@hhs.gov>, "Hamel, Joseph (OS/ASPR/IO)" <Joseph.Hamel@hhs.gov>, Dan Hanfling <DHanfling@iqt.org>, "eric.mcdonald@sdcounty.ca.gov" <eric.mcdonald@sdcounty.ca.gov>, "Wade, David" <david.wade@hq.dhs.gov>, "TARANTINO, DAVID A" <david.a.tarantino@cbp.dhs.gov>, "david.gruber@dshs.texas.gov" <david.gruber@dshs.texas.gov>, "KAUSHIK, SANGEETA" <sangeeta.kaushik@hq.dhs.gov>, "Lee, Scott (OS/ASPR/EMMO)" <Scott.Lee@hhs.gov>, Larry G <PadgetLG@state.gov>, Ryan Morhard

<Ryan.Morhard@weforum.org>, "Steven Jt(tCHFStDPH)" <steven.stack@ky.gov>, "Adams, Jerome (HHS/OASH)" <Jerome.Adams@hhs.gov>, "Mansoura, Monique K." <mmansoura@mitre.org>, "Fantinato, Jessica (USDA.GOV [gcc01.safelinks <jessica.fantinato@usda.gov>, DC <michelle.colby@usda.gov>, "danny.shiau@usuhs.edu" <dannyshiau@usuhs.edu>, "Cordts, Jerome (CTR)" <jerome.cordts@associates.hq.dhs.gov>, "Schnitzer, Jay J" <jschnitzer@mitre.org>, "Ignacio, Joselito"

<joselito.ignacio@fema.dhs.gov>, Will Gaskins <will.gaskins@efiia.com>, CHRISTOPHER ALLEN <chrisallen_ , Kevin Montgomery <kevin@collaborate.org>, "Parker Jr, Gerald W" <gparker@cvm.tamu.edu>, "Logan, Linda L" <llogan@cvm.tamu.edu>, LLogandakar <llogandakar@gmail.com>
Subject: Re: Red Dawn Raging Start March 4

Non-UNMC email

These are not results. These are financial analysts' assessment.

Sent from my iPhone

On Mar 6, 2020, at 7:52 PM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

Disappointing results on Gilead antiviral.

coronavirus-drug-works/ar-BB10MZDi

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Thursday, March 05, 2020 7:16 PM

To: Dr. Eva Lee <eva.evalee Carter Mecher Dr. Eva K Lee <evalee-gatech@pm.me>

Cc: Tracey McNamara <tmcNamara@westernu.edu>; Tom Bossert Baric, Ralph S <rbaric@email.unc.edu>; Brian Benson Mecher, Carter (VA.GOV <carter.mecher@va.gov>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhsgov>; Richard Hatchett <richardhatchett@cepi.net>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; MD. <MVCALLAHAN@mghharvard.edu>; James V <james.lawler@unmc.edu>; David <DMarcozzi@som.umaryland.edu>; Charity A@CDPH <CharityDean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV [gcc01.safelinks <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburnciv@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissaharvey@hqdhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhsgov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Luciana <LBorio@iqt.org>; Dan <DHanfling@iqt.org>; ericmcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV [gcc01.safelinks.) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; CHRISTOPHER ALLEN <chrisallen_10@msn.com>; Kevin Montgomery <kevin@collaborate.org>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar <llogandakar@gmail.com>

Subject: RE: Red Dawn Raging Start March 4

Updated Master Question/ Answer List from DHS Science and Technology.

From: Dr. Eva Lee <eva.evalee.lee64@gmail.com>

Sent: Thursday, March 5, 2020 9:15 PM

ToSubject: Re: Red Dawn Raging Start March 4

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

Also relate to Seattle:

- King county recommended telework on March 4. [[They said the analysis from me solidifies their decision-making. I don't know who has seen what.]]

- Private sectors responded subsequently: Amazon, Google, Facebook, and Microsoft are asking Seattle-based staff to work from home because of coronavirus and [gcc01.safelinks.protection.outlookcom] [gcc01 and Facebook have shut down individual offices as well

- Don't know about school children. They can be vectors.

At the current infection rate, they are faster than the blue curve I have, since I seeded only one case as of Feb 23. It is unclear if they have multiple. The vulnerable population accelerates the infection curve.

On Thu, Mar 5, 2020 at 9:02 PM <cmecher@charter.net> wrote:

> **SEATTLE — The number of statewide coronavirus cases rose to 70 Thursday, up from 39 on Wednesday, with a another fatal case in King County bringing to death toll in Washington to 11.**
>
> **Of the 70 cases, 51 are in King County, 18 in Snohomish County and one in Grant County.**King County Update **[kingcounty.gov]https://www.kingcounty.gov/depts/hea...he-impact.aspx [kingcounty.gov]** [gcc01.safelinks.protectionoutlookcom]
>
> **King County offered this statement about closig schools (we have heard many of these agruments before)**
>
> **Public Health is not currently recommending that schools proactively close unless they have a confirmed case of COVID-19 in a staff member or student.**
>
> **This guidance may have been confusing for some families and schools because schools bring together large groups of children. School closures have significant negative impacts on our community. We will be providing additional information to schools about how to stay open safely. The considerations we have taken in our decision not to currently recommend routine closure at schools include:**
>
> •
>
> **C**

hildren are not known to get seriously ill from COVI

D-19. Closing schools may not be effective beca

use some children may congregate anyway, at other lo

cations.

Many parents, such as healthcare worke

rs, need to be at work. If these critical workers st

ay home with children it causes significant impacts

on the healthcare system and other institutions that

are essential for our community to function.

I

f schools close, some children might have to stay ho

me with alternative caregivers, such as elders, who

are more vulnerable.

We don't know how effectiv

e

children are in spreading this disease

From: cmecher@charter.net

To: "cmecher@charter.net"

Cc: "Tracey McNamara", "Dr. Eva Lee", Duane", "Tom Bossert", Ralph S", "Brian Benson", Carter (VA.GOV [gcc01.safelinks.protectionoutlook.com] [gcc01.safelinks Richard

(OS/ASPR/EMMO)", "Richard Hatchett", THOMAS", "M.D.", "James V", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV [gcc01 [gcc01.safelinks. CAMERON", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", "Luciana", "Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [gcc01.safelinks [gcc01.safelinks.protectionoutlook.com])", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery"

Sent: Thursday March 5 2020 8:12:24PM

Subject: RE: Red Dawn Raging Start March 4

Beijing reports 4 new cases of coronavirus, all of which were imported from Italy, according to the city's health commission

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From:

To: "cmecher@charter.net"

Cc: "Tracey McNamara", "Dr. Eva Lee", Duane", "Tom Bossert", Ralph S", "Brian Benson", Carter (VA.GOV [gcc01.safelinks [gcc01.safelinks. Richard (OS/ASPR/EMMO)", "Richard Hatchett", THOMAS", "M.D.", "James V", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV [gcc01.safelinks CAMERON", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", "Luciana", "Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [gcc01.safelinks [gcc01.safelinks "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery"

Sent: Thursday March 5 2020 4:45:23PM

Subject: RE: Red Dawn Raging Start March 4

I like to ask myself, knowing what I know now, what do I wish I would have done 2 weeks ago.

Attached is a slide that show side by side the ranking of countries by the number of cases and deaths reported for Feb 20 and Mar 5.

Imagine what this is going to look like in 2 more weeks. What will we have wished we had done today?

From: cmecher@charter.net

To: "cmecher@charternet"

Cc: "Tracey McNamara", "Dr. Eva Lee", Duane", "Tom Bossert", Ralph S", "Brian Benson", Carter (VA.GOV [gcc01.safelinks.protection. [gcc01 Richard (OS/ASPR/EMMO)", "Richard Hatchett", THOMAS", "MD.", "James V", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV [gcc01.safelinks.protection.outl

[gcc01.safelinks.protection.outlook.com])", CAMERON", "rjglassjr@gmail.com", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", "Luciana", "Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [gcc01.safelinks.protection.outlook.com])", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery"

Sent: Thursday March 5 2020 4:19:09PM

Subject: RE: Red Dawn Raging Start March 4

Some news reports (pressure now on CA Governor, SF mayor, and state and local public health leaders):

San Francisco reports first 2 cases of coronavirus; both are the result of community spread

Palestinian Authority President Mahmoud Abbas has declared a state of emergency due to coronavirus; all schools and universities will be closed - Jerusalem Post

Cordon sanitaire: The decision to put Bethlehem on lockdown was taken by Israel in coordination with the Palestinian Authority, according to local media. As of midnight, no one is allowed to enter or leave the city.

From: cmecher@charter.net

To: "cmecher@charter.net"

Cc: "Tracey McNamara", "Dr. Eva Lee", Duane", "Tom Bossert", Ralph S", "Brian Benson", Carter (VA.GOV [gcc01.safelinks.protection.outlook.com])", Richard (OS/ASPR/EMMO)", "Richard Hatchett", THOMAS", "M.D.", "James V", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV [gcc01.safelinks.protection.outlook.com] [gcc01.safelinks CAMERON", "rjglassjr@gmail.com", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", "Luciana", "Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [gcc01.safelinks.protection.outlook.com] [gcc01.safelinks. "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery"

Sent: Thursday March 5 2020 3:59:49PM

Subject: RE: Red Dawn Raging Start March 4

Richard Hatchett asked me to forward this message from Italy to our group

Preparing for COVID-19 - Message from the ESICM President & colleagues in Northern Italy

[mailchi.mp]https://mailchi.mp/esicm/the-future-of-haemodynamic-monitoring-first-webinar-of-the-year-1009715 [mailchi.mp] [gcc01.safelinks.]

From: cmecher@charter.net

To: "Tracey McNamara"

Cc: "Dr. Eva Lee", Duane", "Tom Bossert", Ralph S", "Brian Benson", Carter (VA.GOV [gcc01.safelinks.protection.outlookcom])", Richard (OS/ASPR/EMMO)", "Richard Hatchett", THOMAS", "M.D.", "James V", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV [gcc01.safelinks. [gcc01.safelinks CAMERON", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", "Luciana", "Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [gcc01.safelinks [gcc01.safelinks "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery"

Sent: Thursday March 5 2020 3:46:37PM

Subject: RE: Red Dawn Raging Start March 4

History doesn't repeat itself, but often does rhyme

In 1918, the pandemic started on the east coast and swept across the country from east to west. The initial cities that were hit were understandably a little slow to react. Initially, public health leaders minimized the threat. It was fascinating knowing how the outbreak would unfold to read newspaper accounts and the quotes and responses by politicians and health departments (who early on tried to reassure and calm the public by communicating that they thought the worst had passed when the outbreak was just beginning to accelerate). These cities on the east coast had the misfortune of being the first to face this threat. Other cities like St Louis were lucky in that they had the chance to see what was happening to the east and act more quickly and more aggressively.Influenza never traveled faster than modern transportation. In 1918, travel was by ship or train.

In 2020, this pandemic seems to be starting on the opposite coast. Seattle has the misfortune of being the first major US city to be impacted. We are seeing some of the same reassurances from political and public health leaders to calm the public and minimize the threat. We have heard that Americans are at low risk. We also have heard it is a mild disease where more than 80% of those infected have either no symptoms or very mild disease, and only the very elderly or those with underlying medical conditions are at risk. Only 0.5% of those who become infected die (and again the vast majority are very old with chronic conditions).That description sounds even milder than flu because flu also hits the very young and anyone who had the flu would not likely remember it as a mild disease. And we hear that this disease is not impacting children so really no need to close the schools. I suspect there will be other cities in California and Oregon up and down the west coast that will soon be impacted and leaders will also need to make a decision re the public health interventions. Like 1918 we willl have a natural experiment to assess the effectiveness of the public health interventions (both the measures and the timing). The question is how quickly will this outbreak emerge since a number of areas across the US have already been seeded and influenza can now travel at the speed of air travel. If we are lucky the outbreaks will be asynchronous and some cities will have enough time to be able to learn from the first cities like Seattle and judge the wisdom of the decisions being made now. But this isn't 1918 and I'm not sure there will be enough time for that to happen. What is unfortunate is that they don't need to wait for results from the Seattle experiment, they can learn from China's experience, Hong Kong's experience, and Singapore's experience. They can also go back to the body of work that has been done on community mitigation. Has CDC modeled the interventions they are proposing? How effectively do these interventions reduce community transmission? In short, where is the science to support these recommendations in the face of what we are learning from the experiences of China, Hong Kong and Singapore? When history judges our response, the comparison will be to the best practices. Unlike 1918, we were actually blessed to know about those best practices before COVID arrived. Seems like a sin not to take full advantage of that knowledge.

From: "Tracey McNamara"

To: "cmecher@charter.net"

Cc: "Dr. Eva Lee", Duane", "Tom Bossert", Ralph S", "Brian Benson", Carter (VA.GOV [gcc01.safelinks. [gcc01.safelinks [urldefensecom])", Richard (OS/ASPR/EMMO)", "Richard Hatchett", THOMAS", "M.D.", "James V", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV [gcc01.safelinks] [gcc01.safelinks CAMERON", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", "Luciana", "Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [gcc01.safelinks [gcc01.safelinks "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery"

Sent: Thursday March 5 2020 2:02:25PM

Subject: RE: Red Dawn Raging Start March 4

Unbelievable and unfortunate.

From: cmecher@charter.net

Sent: Thursday, March 05, 2020 10:53 AM

To: <cmecher@charternet>

Cc: 'Dr Eva Lee' <eva.evalee. 'Caneva, Duane' <duane.caneva@hq.dhs.gov>; 'Tom Bossert' <tom 'Baric, Ralph S' <rbaric@email.unc.edu>; 'Brian Benson' <brian.benson@icloudcom>; 'Mecher, Carter (VA.GOV [gcc01.safelinks <carter.mecher@va.gov>; Tracey McNamara <tmcNamara@westernu.edu>; 'Hunt, Richard (OS/ASPR/EMMO)' <Richard.Hunt@hhs.gov>; 'Richard Hatchett' <richard.hatchett@cepi.net>; 'WILKINSON, THOMAS' <THOMAS.WILKINSON@hq.dhs.gov>; 'M.D.' <MVCALLAHAN@mgh.harvard.edu>; 'James V' <james.lawler@unmc.edu>; 'David' <DMarcozzi@som.umarylandedu>; 'Charity A@CDPH' <Charity.Dean@cdph.ca.gov>; 'Gregory J' <MartinGJ@state.gov>; 'Walters, William (STATE.GOV [gcc01.safelinks.protection.outlook.com] [gcc01.safelinks.protection.outlook.com])' <walterswa2@state.gov>; 'HAMILTON, CAMERON' <cameron.hamilton@hq.dhs.gov>; 'rjglassjr@gmail.com' <rjglassjr@gmail.com>; 'Dodgen, Daniel (OS/ASPR/SPPR)' <Daniel.Dodgen@hhs.gov>; 'DeBord, Kristin (OS/ASPR/SPPR)' <Kristin.DeBord@hhs.gov>; 'Phillips, Sally (OS/ASPR/SPPR)' <Sally.Phillips@hhs.gov>; 'Matthew J CIV USARMY (USA)' <matthew.j.hepburn.civ@mail.mil>; 'Lisa Koonin' <lkoonin1@gmail.com>; 'HARVEY, MELISSA' <melissa.harvey@hq.dhs.gov>; 'WOLFE, HERBERT' <HERBERT.WOLFE@hq.dhs.gov>; 'Eastman, Alexander' <alexander.eastman@hq.dhs.gov>; 'EVANS,

MARIEFRED' <mariefred.evans@associates.hq.dhs.gov>; 'jwleduc@utmb.edu' <jwleduc@utmb.edu>; 'Johnson, Robert (OS/ASPR/BARDA)' <Robert.Johnson@hhs.gov>; 'Yeskey, Kevin' <kevin.yeskey@hhs.gov>; 'Disbrow, Gary (OS/ASPR/BARDA)' <Gary.Disbrow@hhs.gov>; 'Redd, John (OS/ASPR/SPPR)' <John.Redd@hhs.gov>; 'Hassell, David (Chris) (OS/ASPR/IO)' <David.Hassell@hhs.gov>; 'Hamel, Joseph (OS/ASPR/IO)' <Joseph.Hamel@hhs.gov>; 'Luciana' <LBorio@iqt.org>; 'Dan' <DHanfling@iqt.org>; 'eric.mcdonald@sdcounty.ca.gov' <eric.mcdonald@sdcounty.ca.gov>; 'Wade, David' <david.wade@hq.dhs.gov>; 'TARANTINO, DAVID A' <david.a.tarantino@cbp.dhs.gov>; 'david.gruber@dshs.texas.gov' <david.gruber@dshs.texas.gov>; 'KAUSHIK, SANGEETA' <sangeeta.kaushik@hq.dhs.gov>; 'Lee, Scott (OS/ASPR/EMMO)' <Scott.Lee@hhs.gov>; 'Larry G' <PadgetLG@state.gov>; 'Ryan Morhard' <Ryan.Morhard@weforum.org>; 'Steven Jt(tCHFStDPH)' <steven.stack@ky.gov>; 'Adams, Jerome (HHS/OASH)' <JeromeAdams@hhs.gov>; 'Mansoura, Monique K.' <mmansoura@mitre.org>; 'Fantinato, Jessica (USDA.GOV [gcc01.safelinks.protection. [gcc01.safelinks <jessica.fantinato@usda.gov>; 'DC' <michelle.colby@usda.gov>; 'danny.shiau@usuhs.edu' <danny.shiau@usuhs.edu>; 'Cordts, Jerome (CTR)' <jerome.cordts@associates.hq.dhs.gov>; 'Schnitzer, Jay J' <jschnitzer@mitreorg>; 'Ignacio, Joselito' <joselito.ignacio@fema.dhs.gov>; 'Will Gaskins' <will.gaskins@efiia.com>; 'CHRISTOPHER ALLEN' <chrisallen_1 'Kevin Montgomery' <kevin@collaborate.org>

Subject: Re: Red Dawn Raging Start March 4

Listening to CDC. Anita Patel has just summarized CDC guidance re community mitigation measures. They are not recommending closing schools--talking about reactive school closure (e.g., a student becomes ill and they close the school to disinfect).

Very unfortunate.

From:

To: "Dr. Eva Lee"

Cc: Duane", "Tom Bossert", Ralph S", "Brian Benson", Carter (VA.GOV [gcc01.safelinks.protection.outlook.com])", "Tracey McNamara", Richard (OS/ASPR/EMMO)", "Richard Hatchett", THOMAS", "M.D.", "James V", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV [gcc01.safelinks [gcc01.safelinks.protection.outlookcom])", CAMERON", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", "Luciana", "Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [gcc01.safelinks.protection.outlook.com] [gcc01.safelinks "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery"

Sent: Thursday March 5 2020 1:50:09PM

Subject: Re: Red Dawn Raging Start March 4

CDC is going to hold a meeting today on telehealth. Just some background as we prepare to gear up for implementing teleheath,

Annually, primary care clinics see 482M patients (actually patient visits) in the US (the total number of outpatient visits is about 900K). Over a 3 month period primary care providers see about 120M patient visits. So hold onto that number for a moment,

Let's assume this outbreak has an attack rate of 30% (so about 100M infected) and that 50% of those infected are asymptomatic (50M). Let's assume the other 50% (those 50M who are symptomatic) are the ones seeking care. How many telehealth visits per patient do we think will be required? There will be the initial presentation, then most of these patients (35%-38% of those who were infected, so 35M-38M) will be 'prescribed' home isolation for 14 days). The remainder will require hospitalization but

probably not before additional teleheath visits as their conditions worsens. How many follow up telehealth visits will be necessary to monitor the health of these patients in home isolation? Let's say we want to touch base with the patients twice per week, so that is another 4 visit per patient. that would equate to 140M-152M visits. Now add in the other 50M visits for initial presentation and we are up to about 200M telehealth visits. That is about double the number of all primary care visits in the US over a 3 month period. This is probably a conservative estimate since any patient on home quarantine will probably also be seeking to speak with their physician or primary care provider and chronically ill and elderly patients will likely require daily checks. This also does not include the background demand we see each day (for the management of chronic conditions etc.) where we would also like to use telehealth.

We have never done this on this scale before. We have people from large healthcare systems on this email, how are you planning to scale up to meet the demand for COVID and meet the needs of non-COVID patients with chronic conditions?

From: "Dr. Eva Lee"

To: Duane"

Cc: "Tom Bossert", Ralph S", "Brian Benson", Carter (VA.GOV [gcc01.safelinks. "Tracey McNamara", Richard (OS/ASPR/EMMO)", "Richard Hatchett", THOMAS", "M.D.", "James V", "David", "Charity A@CDPH", "Gregory J", William (STATE.GOV [gcc01 CAMERON", "rjglassjr@gmail.com", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", "Luciana", "Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [gcc01.safelinks "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery"

Sent: Thursday March 5 2020 1:05:54PM

Subject: Re: Red Dawn Raging Start March 4

Yes, we have a huge burden, and we are all thinking about the entire system and the cascading downstream effects. Perhaps a drawing will make a good exercise for the policy makers. We like to use the binary trees, since it explodes fast enough already. I think a tree with the contact rate would be great to show the policy makers so they know how many of the elderly infected would end up in hospitals/beds and we can even show the queues!

On Thu, Mar 5, 2020 at 12:02 PM Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:

Not just the grandparents, but the healthcare system functionality for everyone, too. There is increased mortality in older age groups, but the hospital stays are 2-3 times longer, resource intense, and affect access and availability for everyone in the community.

From: Tom Bossert

Sent: Thursday, March 5, 2020 11:52 AM

To: cmecher@charter.net

Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; Baric, Ralph S <rbaric@email.unc.edu>; Brian Benson <brian. Mecher, Carter (VA.GOV [gcc01.safel [gcc01.safelinks.protectionoutlook.com]) <carter.mecher@va.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Dr Eva Lee <eva.evalee.lee64@gmail.com>; WILKINSON,

THOMAS <thomas.wilkinson@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; James V <james.lawler@unmc.edu>; David <DMarcozzi@som.umaryland.edu>; Charity A@CDPH <CharityDean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV [gcc01.safelinks.
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Subject: Re: Red Dawn Raging Start March 4

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One of the principles he teaches is to provide or introduce incentives and disincentives to shape complex situations. We haven't yet convinced the country of the incentives. I continue to like Lawler's framing: keep the kids out of school to save the grandparents, not the kids.

-Tom

On Mar 5, 2020, at 11:34 AM, cmecher@charter.netwrote:

Dave Snowden's Cynefin model is great. Always need to know which domain you are in.

There are pieces of what is happening in other domains as well--we are learning as we go from the best practices and China (knowable). And although we have some SOP for NPIs, we are in the complex domain trying to reinforce the emergence of patterns we want thru some simple rules (staying home if you are ill, staying home if someone is ill, closing schools, and avoiding socially dense environments (social distancing)). Every person could operationalize these rules and adapt them to whatever local conditions might exist (in their home and at work, etc.). If a large enough fraction of 330M Americans follow those simple rules we drive down disease transmission. Modify the rules and the pattern changes. We also know that complex systems are exquisitely dependent upon initial conditions and those will be different in each community. Modelers have done just this (Bob Glass in particular). They have learned what rules seem to favor the emergence of the patterns we desire. When

leaders modify those simple rules (or exclude one altogether) and pull the trigger at different points in the outbreak, the outcomes are nonlinear and not predictable.

From: "Caneva, Duane"

To: "cmecher@charter.net"

Cc: Ralph S", "Brian Benson", Carter (VA.GOV [gcc01 "Tracey McNamara", Richard (OS/ASPR/EMMO)", "Richard Hatchett", "Dr. Eva Lee", THOMAS", "M.D.", "James V", "David", "Tom Bossert", "Charity A@CDPH", "Gregory J", William (STATE.GOV [gcc01.safelinks. [gcc01 CAMERON", "rjglassjr@gmail.com", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", "Luciana", "Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [gcc01.safelinks.protection.outlookcom] [gcc01.safelinks. "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito", "Will Gaskins", "CHRISTOPHER ALLEN", "Kevin Montgomery"

Sent: Thursday March 5 2020 11:01:33AM

Subject: RE: Red Dawn Raging Start March 4

Cynefin Model

Wicked Problem—think we're lower right.

From:

Sent: Thursday, March 5, 2020 10:49 AM

To:

Cc: 'Baric, Ralph S' <rbaric@email.unc.edu>; 'Brian Benson' <brian. Caneva, Duane <duane.caneva@hq.dhs.gov>; 'Mecher, Carter (VA.GOV [gcc01.safelinks.protection.outlookcom] [gcc01.safelinks. <carter.mecher@va.gov>; 'Tracey McNamara' <tmcNamara@westernu.edu>; 'Hunt, Richard (OS/ASPR/EMMO)' <Richard.Hunt@hhs.gov>; 'Richard Hatchett' <richard.hatchett@cepi.net>; 'Dr. Eva Lee' <eva.eval WILKINSON, THOMAS <thomas.wilkinson@hqdhs.gov>; 'M.D.' <MVCALLAHAN@mgh.harvard.edu>; 'James V' <james.lawler@unmc.edu>; 'David' <DMarcozzi@som.umaryland.edu>; 'Tom Bossert' 'Charity A@CDPH' <Charity.Dean@cdph.ca.gov>; 'Gregory J' <MartinGJ@state.gov>; 'Walters, William (STATE.GOV [gcc01.safelinks [gcc01.safelinks.protection.outlookcom])' <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; <rjglassjr@gmailcom>; 'Dodgen, Daniel (OS/ASPR/SPPR)' <Daniel.Dodgen@HHS.GOV>; 'DeBord, Kristin (OS/ASPR/SPPR)' <Kristin.DeBord@hhs.gov>; 'Phillips, Sally (OS/ASPR/SPPR)' <Sally.Phillips@hhs.gov>; 'Matthew J CIV USARMY (USA)' <matthew.j.hepburn.civ@mail.mil>; 'Lisa Koonin' <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <herbert.wolfe@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; 'jwleduc@utmb.edu' <jwleduc@utmb.edu>; 'Johnson, Robert (OS/ASPR/BARDA)' <Robert.Johnson@hhs.gov>; Yeskey, Kevin

<kevin.yeskey@hhs.gov>; 'Disbrow, Gary (OS/ASPR/BARDA)' <Gary.Disbrow@hhs.gov>; 'Redd, John (OS/ASPR/SPPR)' <John.Redd@hhs.gov>; 'Hassell, David (Chris) (OS/ASPR/IO)' <David.Hassell@hhs.gov>; 'Hamel, Joseph (OS/ASPR/IO)' <Joseph.Hamel@hhs.gov>; 'Luciana' <LBorio@iqt.org>; 'Dan' <DHanfling@iqt.org>; 'eric.mcdonald@sdcounty.ca.gov' <eric.mcdonald@sdcounty.ca.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; 'david.gruber@dshs.texas.gov' <david.gruber@dshs.texas.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; 'Lee, Scott (OS/ASPR/EMMO)' <Scott.Lee@hhs.gov>; 'Larry G' <PadgetLG@state.gov>; 'Ryan Morhard' <Ryan.Morhard@weforum.org>; 'Steven Jt(tCHFStDPH)' <steven.stack@ky.gov>; 'Adams, Jerome (HHS/OASH)' <Jerome.Adams@hhs.gov>; 'Mansoura, Monique K.' <mmansoura@mitre.org>; 'Fantinato, Jessica (USDA.GOV [gcc01.safelinks.protection.outl [gcc01 <jessica.fantinato@usda.gov>; 'DC' <michelle.colby@usda.gov>; 'danny.shiau@usuhs.edu' <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; 'Schnitzer, Jay J' <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>

Subject: RE: Red Dawn Raging Start March 4

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Projections for Notional US City with population of 3.3M (1% of US population) with attack rate of 30% .

Michael, James and Duane, We can use this for discussions being planned.

As of yesterday, Wuhan has reported 49,671 cases and 2,305 deaths. The cases are plateauing but deaths will continue to rise over the next month (deaths lag cases by about 3 weeks). There are currently 1,041 patients who remain in critical condition A conservative final death count would be on the order of about 3,000. Assuming an overall CFR of 0.5%, we could estimate a projected number infected as ~600K in Wuhan. Assuming Wuhan has a population of 8.4M, that equates to an attack rate of 600K/8.4M = 7%. Even if we think that cases and deaths could be under-reported. and China was hiding half the numbers, the attack rate would still only be 14% (a mitigated outbreak).

I had a real hard time reconciling that until I read the paper that Nathaniel shared that concluded that the outbreak in Wuhan was a mitigated outbreak Wuhan was a little late to respond But they made up for that delay with intensity of interventions that seemed to have worked. Given what we have seen in Wuhan, I don't even want to imagine an unmitigated outbreak. But Seattle is on the way to revealing it for us.

From: cmecher@charter.net

To:

Cc: Ralph S", "Brian Benson", Duane", Carter (VAGOV [gcc01.safelinks [gcc01.safelinks. "Tracey McNamara", Richard (OS/ASPR/EMMO)", "Richard Hatchett", "Dr. Eva Lee", THOMAS", "MD.", "James V", "David", "Tom Bossert", "Charity A@CDPH", "Gregory J", William (STATE.GOV [gcc01.safelinks.protection [gcc01.safelinks. CAMERON", "rjglassjr@gmail.com", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", "Luciana", "Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica

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Sent: Thursday March 5 2020 10:03:26AM

Subject: RE: Red Dawn Raging Start March 4

Bad translation from Japan re cruse ship numbers (8 more cases plus correction of numbers due to duplicates).

March 5, 2020 22:05 The outbreak of eight new passengers has been revealed on the Diamond Princess, a cruise ship in which outbreaks of the new coronavirus have been confirmed. A total of 696 passengers and occupants of cruise ships were confirmed to be infected, excluding those who became infected after returning home.

On January 1, the cruise ship Diamond Princess, which was confirmed to be infected with the new coronavirus, was disembarked on the 1st of this month. However, according to the Ministry of Health, Labor and Welfare, she left after a period of health observation. As a result of carrying out a virus test for them, eight new passengers were found to be infected.

A total of 696 people were confirmed to be infected on the cruise ship, excluding those who became infected after returning home.

According to the Ministry of Health, Labor and Welfare, in addition to this 696 people, there is one crew member who got on board after the cruise ship entered Yokohama Port and was confirmed infected.

In addition, the Ministry of Health, Labor and Welfare had previously announced the number of people confirmed to be infected on a cruise ship by the total number of people, but from the 5th, corrected the number to duplicate people and announced it. about it.

From: cmecher@charter.net

To: "cmecher@charter.net"

Cc: Ralph S", "Brian Benson", Duane", Carter (VA.GOV [gcc01.safelinks.protection.outlook.com] [gcc01.safelinks. "Tracey McNamara", Richard (OS/ASPR/EMMO)", "Richard Hatchett", "Dr. Eva Lee", THOMAS", "M.D.", "James V", "David", "Tom Bossert", "Charity A@CDPH", "Gregory J", William (STATE.GOV [gcc01.safelinks.protection.outlookcom] [gcc01 CAMERON", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", "Luciana", "Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [gcc01.safelinks.protectionoutlook.com] [gcc01.safelinks.] [urldefensecom])", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito"

Sent: Thursday March 5 2020 9:23:32AM

Subject: RE: Red Dawn Raging Start March 4

Don't remember if I shared this story from Japan.

Japan's Prime Minister Shinzo Abe called on schools to close nationwide from March 2 for several weeks to prevent the spread of the new coronavirus.

"The government considers the health and safety of children above anything else," Abe said.

"We request all primary, junior high and high schools... across the nation to close temporarily from March 2 next week until their spring break."

From:

To: "cmecher@charternet"

Cc: Ralph S", "Brian Benson", Duane", Carter (VA.GOV [gcc01.safelinks
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Sent: Thursday March 5 2020 9:16:43AM

Subject: RE: Red Dawn Raging Start March 4

From: cmecher@charter.net

To:

Cc: Ralph S", "Brian Benson", Duane", Carter (VA.GOV [gcc01.safelinks.protection.outlookcom] [gcc01.safelinks. "Tracey McNamara", Richard (OS/ASPR/EMMO)", "Richard Hatchett", "Dr. Eva Lee", THOMAS", "M.D.", "James V", "David", "Tom Bossert", "Charity A@CDPH", "Gregory J", William (STATE.GOV [gcc01.safelinks.protection. CAMERON", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", "Luciana", "Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDAGOV)", "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito"

Sent: Thursday March 5 2020 9:04:49AM

Subject: RE: Red Dawn Raging Start March 4

Forgot the assessment for VA. The VA will be hit particularly hard due to the fact that half the veterans are age 65+. VA hospitals are pretty much geriatric acute care facilities.

From: cmecher@charter.net

To: Ralph S"

Cc: "Brian Benson", Duane", Carter (VA.GOV [gcc01.safelinks.protectionoutlook.com] [gcc01.safelinks. "Tracey McNamara", Richard (OS/ASPR/EMMO)", "Richard Hatchett", "Dr. Eva Lee", THOMAS", "M.D.", "James V", "David", "Tom Bossert", "Charity A@CDPH", "Gregory J", William (STATE.GOV [gcc01.safelinks. CAMERON", "rjglassjr@gmail.com", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", "Luciana", "Dan", "eric.mcdonald@sdcounty.ca.gov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [gcc01.safelinks "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito"

Sent: Thursday March 5 2020 8:55:31AM

Subject: RE: Red Dawn Raging Start March 4

Impact assessment I pulled together and shared with my leaders. I utilized the attack rate of 20% that was experienced on the Diamond Princess so that I could begin to help people get their head around what is perceived to be a mild outbreak means. I purposely used an actual event (and actual attack rate) for comparison so as not to be perceived as fear mongering. I sense confusion among very smart people (politicians, physicians, public health leaders) who hear that more than 80% of those who are infected have mild disease and that overall case fatality rates are on the order of 0.5%. And they then equate these stats to a mild outbreak. They really don't consider attack rates and the impact of the 20% with something other than mild illness means.

A more reasonable attack rate to plan for is around 40%, so just double everything in the attached reports You all can look at these projections and envision what will happen to our healthcare system if we don't take aggressive actions to slow community transmission now. This is not the time to get fancy or creative with NPIs and try to finesse things (ala carte implementation). We should learn from China and the other best practice nations already fighting this disease. We know what works; we just need the will to do it. We should be treating this like we treat stroke and acute coronary syndromes where time = tissue In this case time = transmission.

From: "Baric, Ralph S"

To: "Brian Benson", Duane"

Cc: "Carter Mecher", Carter (VA.GOV [gcc01.safelinks.protection "Tracey McNamara", Richard (OS/ASPR/EMMO)", "Richard Hatchett", "Dr. Eva Lee", THOMAS", "M.D.", "James V", "David", "Tom Bossert", "Charity A@CDPH", "Gregory J", William (STATE.GOV [gcc01.safelinks CAMERON", "rjglassjr@gmail.com", Daniel (OS/ASPR/SPPR)", Kristin (OS/ASPR/SPPR)", Sally (OS/ASPR/SPPR)", "Matthew J CIV USARMY (USA)", "Lisa Koonin", MELISSA", HERBERT", Alexander", MARIEFRED", "jwleduc@utmb.edu", Robert (OS/ASPR/BARDA)", Kevin", Gary (OS/ASPR/BARDA)", John (OS/ASPR/SPPR)", David (Chris) (OS/ASPR/IO)", Joseph (OS/ASPR/IO)", "Luciana", "Dan", "eric.mcdonald@sdcounty.cagov", David", DAVID A", "david.gruber@dshs.texas.gov", SANGEETA", Scott (OS/ASPR/EMMO)", "Larry G", "Ryan Morhard", "Steven Jt(tCHFStDPH)", Jerome (HHS/OASH)", Monique K.", Jessica (USDA.GOV [gcc01.safelinks.protection.outlook.com] "DC", "danny.shiau@usuhs.edu", Jerome (CTR)", Jay J", Joselito"

Sent: Thursday March 5 2020 7:52:21AM

Subject: RE: Red Dawn Raging Start March 4

Hi Brian,

No coronavirus RNA viruses don't incorporate their genomes into the host DNA

Yes, potential hit and run disease is pulmonary fibrosis, which can occur as a result of acute lung injury months to years later

No, there is absolutely no evidence that this virus is bioengineered.

Ralph

From: Brian Benson <brian.

Sent: Thursday, March 5, 2020 12:08 AM

To: Caneva, Duane <duane.caneva@hq.dhs.gov>

Cc: Carter Mecher Mecher, Carter (VA.GOV [gcc01.safelinks.protection.outl <carter.mecher@va.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Dr. Eva Lee <eva.evalee.lee64@ WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; James V <james.lawler@unmc.edu>; David <DMarcozzi@som.umaryland.edu>; Tom Bossert Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Baric, Ralph S <rbaric@email.unc.edu>; Gregory J <MartinGJ@state.gov>; Walters, William (STATEGOV [gcc01.safelinks.protection.outlook.com] [gcc01.safelinksprotectionoutlook.com]) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmailcom>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexandereastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>;jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhsgov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhsgov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Luciana <LBorio@iqt.org>; Dan <DHanfling@iqt.org>;eric.mcdonald@sdcounty.ca.gov; Wade, David <davidwade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>;david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV [gcc01.safelinks <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associateshq.dhs.gov>; Schnitzer, Jay J <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>

Subject: Re: Red Dawn Raging Start March 4

Duane, thanks for including me in the conversation.

I've been reading what I can on PubMed and in the news, but can't find many answers, thus I'll asks this group. First, being that some viruses are capable of inserting their DNA into hosts genome, is there any evidence that this RNA virus can do that? I have nothing to support this, but I ask to anticipate any late term effects, i.e. Cancer, cardiomyopathy, diabetes, auto immune diseases or other post viral syndromes. Secondly, are there any restriction sites in this strain that are not present in others of the same family, suggesting this is engineered? Lastly, what's gong on in North Korea?

Folks, those of you that know me understand I'm glad to help in any way I can. Please let me know

On Mar 4, 2020, at 10:24 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:

Please use this thread as of evening of 04 March.

Duane C. Caneva, MD, MS
Chief Medical Officer
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(o)
(c)
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Executive Assistant: Nichole Burton,nichole.burton2@associates.hq.dhs.gov,

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To: 'Tracey McNamara'[tmcNamara@westernu.edu]; 'Carter 'Dr. Eva

Cc: 'Caneva, Duane'[duane.caneva@hq.dhs.gov]; 'McDonald, Eric'[Eric.McDonald@sdcounty.ca.gov]; 'Richard 'Rob Darling, MD'[rdarling@patronusmedical.com]; 'William Lang'[wlang@worldclinic.com]; 'Mecher, Carter'[Carter.Mecher@va.gov]; 'Tom 'Richard Hatchett'[richard.hatchett@cepi.net]; 'Lawler, James V'[james.lawler@unmc.edu]; 'Parker Jr, Gerald W'[gparker@cvm.tamu.edu]; 'Hanfling, Dan'[DHanfling@iqt.org]; 'Gruber,David (DSHS)'[David.Gruber@dshs.texas.gov]; 'CHRISTOPHER 'Borio, Luciana'[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; 'Hunt, Richard (OS/ASPR/EMMO)'[Richard.Hunt@hhs.gov]; 'WILKINSON, THOMAS'[THOMAS.WILKINSON@hq.dhs.gov]; 'M.D.'[MVCALLAHAN@mgh.harvard.edu]; 'David'[DMarcozzi@som.umaryland.edu]; 'CharitytA@CDPH'[Charity.Dean@cdph.ca.gov]; 'Gregory J'[MartinGJ@state.gov]; 'Walters, William (STATE.GOV)'[walterswa2@state.gov]; 'HAMILTON, CAMERON'[cameron.hamilton@hq.dhs.gov]; 'Dodgen,tDanielt(OS/ASPR/SPPR)'[daniel.dodgen@hhs.gov]; 'DeBord,Kristin (OS/ASPR/SPPR)'[Kristin.DeBord@hhs.gov]; 'Phillips, Sally (OS/ASPR/SPPR)'[Sally.Phillips@hhs.gov]; 'Matthew J CIV USARMY (USA)'[matthew.j.hepburn.civ@mail.mil]; 'Lisa Koonin'[lkoonin1 'HARVEY, MELISSA'[melissa.harvey@hq.dhs.gov]; 'WOLFE, HERBERT'[HERBERT.WOLFE@hq.dhs.gov]; 'Eastman, Alexander'[alexander.eastman@hq.dhs.gov]; 'EVANS, MARIEFRED'[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; 'Johnson, Robert (OS/ASPR/BARDA)'[Robert.Johnson@hhs.gov]; 'Yeskey, Kevin'[kevin.yeskey@hhs.gov]; 'Disbrow, Gary (OS/ASPR/BARDA)'[Gary.Disbrow@hhs.gov]; 'Redd, John (OS/ASPR/SPPR)'[John.Redd@hhs.gov]; 'Hassell, David (Chris) (OS/ASPR/IO)'[David.Hassell@hhs.gov]; 'Hamel, Joseph (OS/ASPR/IO)'[Joseph.Hamel@hhs.gov]; 'Wade, David'[david.wade@hq.dhs.gov]; 'TARANTINO, DAVID A'[david.a.tarantino@cbp.dhs.gov]; 'KAUSHIK, SANGEETA'[sangeeta.kaushik@hq.dhs.gov]; 'Lee, Scott (OS/ASPR/EMMO)'[Scott.Lee@hhs.gov]; 'Larry G'[PadgetLG@state.gov]; 'Ryan Morhard'[Ryan.Morhard@weforum.org]; 'Steven Jt(tCHFStDPH)'[steven.stack@ky.gov]; 'Adams, Jerome (HHS/OASH)'[Jerome.Adams@hhs.gov]; 'Mansoura, Monique K.'[mmansoura@mitre.org]; 'Fantinato, Jessica (USDA.GOV)'[jessica.fantinato@usda.gov]; 'DC'[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; 'Cordts, Jerome (CTR)'[jerome.cordts@associates.hq.dhs.gov]; 'Schnitzer, Jay J.'[jschnitzer@mitre.org]; 'Ignacio, Joselito'[joselito.ignacio@fema.dhs.gov]; 'Will Gaskins'[will.gaskins@efiia.com]; 'Kevin Montgomery'[kevin@collaborate.org]; 'Logan, Linda L'[llogan@cvm.tamu.edu]; 'Venkayya, Rajeev'[rajeev.venkayya@takeda.com]; 'Ronny 'Brian 'Dr. Eva K

From:

Sent: Tue 3/17/2020 1:58:52 PM (UTC-04:00)

Subject: RE: Red Dawn Responding, Start 16 March

I presume that the services SGs, head of DHA, and the JCS have all discussed military support to civil authorities, but with being a whole of nation problem, I do not see the "cavalry" able to bring many horses to bear on it. Military might be ale to bring some logistical services and maybe some other things, but doubt you are going to see widespread combat hospitals set up around the country.

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Tuesday, March 17, 2020 1:39 PM

To: 'Carter Mecher' 'Dr. Eva Lee'

Cc: 'Caneva, Duane' <duane.caneva@hq.dhs.gov>; 'McDonald, Eric' <Eric.McDonald@sdcounty.ca.gov>; 'Richard Tubb' 'Rob Darling, MD' <rdarling@patronusmedical.com>; 'William Lang' <wlang@worldclinic.com>; 'Mecher, Carter' <Carter.Mecher@va.gov>; 'Tom Bossert' 'Richard Hatchett' <richard.hatchett@cepi.net>; 'Lawler, James V' <james.lawler@unmc.edu>; 'Parker Jr, Gerald W' <gparker@cvm.tamu.edu>; 'Hanfling, Dan' <DHanfling@iqt.org>; 'Gruber,David (DSHS)' <David.Gruber@dshs.texas.gov>; 'CHRISTOPHER ALLEN' 'Borio, Luciana' <LBorio@iqt.org>; 'Baric, Ralph S' <rbaric@email.unc.edu>; 'Hunt, Richard (OS/ASPR/EMMO)' <Richard.Hunt@hhs.gov>; 'WILKINSON, THOMAS' <THOMAS.WILKINSON@hq.dhs.gov>; 'M.D.' <MVCALLAHAN@mgh.harvard.edu>; 'David' <DMarcozzi@som.umaryland.edu>; 'CharitytA@CDPH' <Charity.Dean@cdph.ca.gov>; 'Gregory J' <MartinGJ@state.gov>; 'Walters, William (STATE.GOV)' <walterswa2@state.gov>; 'HAMILTON, CAMERON' <cameron.hamilton@hq.dhs.gov>; 'Dodgen,tDanielt(OS/ASPR/SPPR)' <daniel.dodgen@hhs.gov>; 'DeBord,Kristin (OS/ASPR/SPPR)' <Kristin.DeBord@hhs.gov>; 'Phillips, Sally (OS/ASPR/SPPR)' <Sally.Phillips@hhs.gov>; 'Matthew J CIV USARMY (USA)' <matthew.j.hepburn.civ@mail.mil>; 'Lisa Koonin' 'HARVEY, MELISSA' <melissa.harvey@hq.dhs.gov>; 'WOLFE, HERBERT' <HERBERT.WOLFE@hq.dhs.gov>; 'Eastman, Alexander' <alexander.eastman@hq.dhs.gov>; 'EVANS, MARIEFRED' <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)' <Robert.Johnson@hhs.gov>; 'Yeskey, Kevin' <kevin.yeskey@hhs.gov>; 'Disbrow, Gary (OS/ASPR/BARDA)' <Gary.Disbrow@hhs.gov>; 'Redd, John (OS/ASPR/SPPR)' <John.Redd@hhs.gov>; 'Hassell, David (Chris) (OS/ASPR/IO)' <David.Hassell@hhs.gov>; 'Hamel, Joseph (OS/ASPR/IO)' <Joseph.Hamel@hhs.gov>; 'Wade, David' <david.wade@hq.dhs.gov>; 'TARANTINO, DAVID A' <david.a.tarantino@cbp.dhs.gov>; 'KAUSHIK, SANGEETA' <sangeeta.kaushik@hq.dhs.gov>; 'Lee, Scott (OS/ASPR/EMMO)' <Scott.Lee@hhs.gov>; 'Larry G' <PadgetLG@state.gov>; 'Ryan Morhard' <Ryan.Morhard@weforum.org>; 'Steven Jt(tCHFStDPH)' <steven.stack@ky.gov>; 'Adams, Jerome (HHS/OASH)' <Jerome.Adams@hhs.gov>; 'Mansoura, Monique K.' <mmansoura@mitre.org>; 'Fantinato, Jessica (USDA.GOV)' <jessica.fantinato@usda.gov>; 'DC' <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)' <jerome.cordts@associates.hq.dhs.gov>; 'Schnitzer, Jay J.' <jschnitzer@mitre.org>;

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Subject: Re: Red Dawn Responding, Start 16 March

Thanks Jerry - Has this been discussed as an option with military and public health leaders? Who can take the lead on this and get it moving?
Tracey

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Cc: Dr. Eva K Rob Darling, MD[rdarling@patronusmedical.com]; Carter Dr. Eva Caneva, Duane (DHS.GOV)[duane.caneva@hq.dhs.gov]; eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; Wolfe, Herbert (DHS.GOV)[herbert.wolfe@hq.dhs.gov]; alexander.eastman@hq.dhs.gov[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin (OS/ASPR/IO)[Kevin.Yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; david.a.tarantino@cbp.dhs.gov[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito (FEMA.DHS.GOV)[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis
From: Tracey McNamara[tmcNamara@westernu.edu]
Sent: Tue 3/17/2020 6:26:24 PM (UTC-04:00)
Subject: Re: Red Dawn Responding, Start 16 March

https://thehill.com/policy/defense/488085-pentagon-to-give-5m-respirator-masks-2000-ventilators-to-hhs
Excellent news! DoD contributions to public health

Tracey

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From: Brian Benson
Sent: Tuesday, March 17, 2020 12:10:11 PM
To: Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>; Carter Mecher Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov <eric.mcdonald@sdcounty.ca.gov>; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov <david.gruber@dshs.texas.gov>; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu <mvcallahan@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert

(OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

Channels

HOME >> **CHINA,SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager
Assistant Secretary for Preparedness and Response
Office: ___________
Cell: ___________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson Carter Mecher Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.
Tracey

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From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>;

CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
rdarling@patronusmedical.com
https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Tuesday, March 17, 2020 12:42 PM, Brian Benson wrote:

> Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?
>
> On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:
>
> When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?
> What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.
> Tracey
>
> Get Outlook for Android

From: Dr. Eva Lee <eva.evalee.lee64@gmail.com>
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher
Cc: 1974usna@gmail.com Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito

<joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar
Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson
Brian Benson Dr. Eva K Lee <evalee-
g
Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 9:09 AM
To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:
Sent: Monday, March 16, 2020 11:58 PM
To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'
Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

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From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Sent: Monday, March 16, 2020 10:54 PM
To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>;

danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson MothersheadtJerry L. <1974USNA@gmail.com>; Brian Benson Dr. Eva K Lee <evalee-

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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To: Carter
Cc: Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva Caneva, Duane (DHS.GOV)[duane.caneva@hq.dhs.gov]; eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; Wolfe, Herbert (DHS.GOV)[herbert.wolfe@hq.dhs.gov]; alexander.eastman@hq.dhs.gov[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin (OS/ASPR/IO)[Kevin.Yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; david.a.tarantino@cbp.dhs.gov[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito (FEMA.DHS.GOV)[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis
From: Dr. Eva K
Sent: Tue 3/17/2020 8:23:12 PM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March

Bed surge and resource allocation
Eric, Carter, maybe you can advise me, or all the hospital leaders here, I finished running the 3.3 million city with 30 infection. I have escalated the availability of extra beds etc. So I want to include one more run -- is it reasonable to assume we have 100 beds to begin with for covid-19? Or truly hospitals don't have such spare resources? Local hospitals definitely do not have 100 beds in isolation for covid-19 patients. Please advise me and I will run and include this baseline and share the results.

Eric, I will run the San Diego 47 infected case. This 30-infected one should give you a good idea on what to do. It has a clear benefit for certain combination strategies where decisions can be made quite readily.

Social distancing
It looks like the city has calm down with very few people. Places like grocery stores, Walmart, for day-to-day essential things, and hospitals, nursing homes, day-care centers, etc will still have heavy foot traffic. Delivery is very busy, with tons of delivery through the day. These workers must stay healthy, but in general, they are pretty isolated. I didn't go to the mall to check, I am only surveying so that I know what to think about for the models.

More later...

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 7:41 PM, Carter Mecher wrote:

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deat
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	

28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	1
1-Mar	130	2	84		1,694	34	73	1
2-Mar	191	3	120		2,036	52	99	6
3-Mar	212	4	151		2,502	79	103	6
4-Mar	285	4	202		3,089	107	154	11
5-Mar	423	7	248	1	3,858	148	197	12
6-Mar	613	9	517	10	4,636	197	309	15
7-Mar	949	16	613	17	5,833	233	434	19
8-Mar	1,126	19	848	25	7,375	366	544	22
9-Mar	1,412	30	1,231	30	9,172	463	728	27
10-Mar	1,784	33	1,646	35	10,149	631	1,010	31
11-Mar	2,281	49	2,277	55	12,462	827	1,311	38
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	40

13-Mar	3,661	79							48
14-Mar	4,499	91							58
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774		69
16-Mar	6,633	148							87
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*		*104*

Sent from Mail for Windows 10

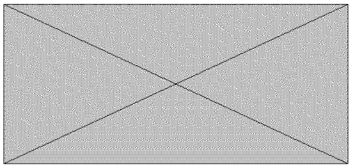
From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than

clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.



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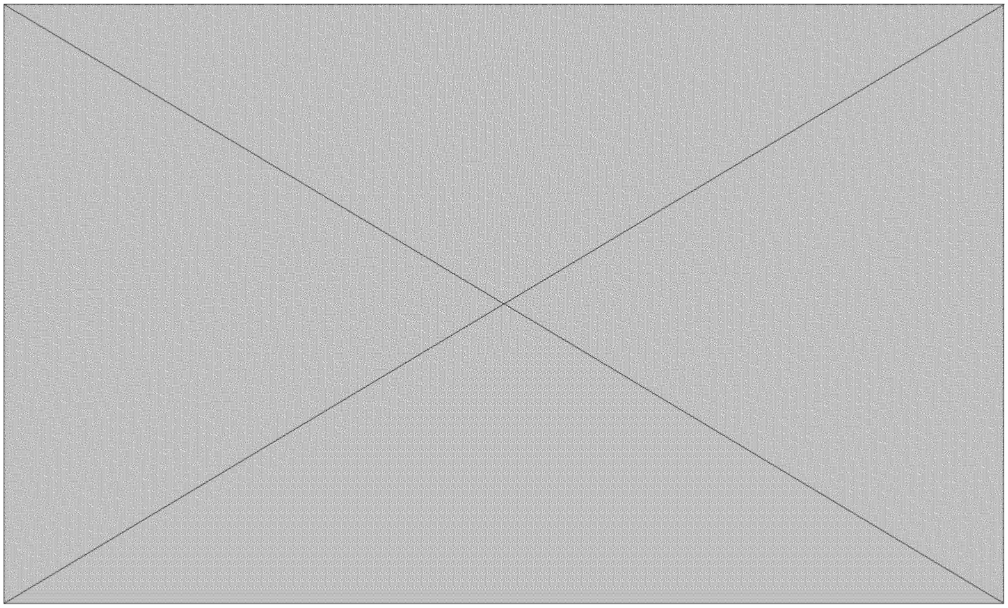
Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

369



Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ___________

Cell: ___________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson Carter Mecher Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb <bg William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

Get Outlook for Android

From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical

San Diego / Washington DC / Los Angeles

Office:

Fax:

Mobile:

https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/

rdarling@patronusmedical.com

https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

Get Outlook for Android

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher
Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Brian Benson Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can**

act and act quickly. TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher ____________ wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in

1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)';

'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

---

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR)

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Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson
MothersheadtJerry L.
Brian Benson Dr. Eva K Lee <evalee-

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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immediately and destroy the original message and all copies.

To: Dr. Eva K
Cc: Carter Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Dr. Eva Caneva, Duane (DHS.GOV)[duane.caneva@hq.dhs.gov]; eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; Wolfe, Herbert (DHS.GOV)[herbert.wolfe@hq.dhs.gov]; alexander.eastman@hq.dhs.gov[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin (OS/ASPR/IO)[Kevin.Yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; david.a.tarantino@cbp.dhs.gov[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito (FEMA.DHS.GOV)[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis
From: Rob Darling, MD[rdarling@patronusmedical.com]
Sent: Wed 3/18/2020 9:12:55 AM (UTC-04:00)
Subject: Re: Red Dawn Responding, Start 16 March

Some promising results with Chloroquine as a treatment for COVID-19? Heard a paper should be released soon.
https://www.connexionfrance.com/French-news/French-researcher-in-Marseille-posts-successful-Covid-19-coronavirus-drug-trial-results

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

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www.patronusmedical.com
rdarling@patronusmedical.com
www.LinkedIn.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 9:24 PM Dr. Eva K Lee wrote:

I am counting places with people. How are the prisons doing? I understand Ohio is releasing prisoners to curb the covid-19 virus and to prepare for rooms for quarantine of infected ones. Is there a systematic way to disinfect the sites? How can one minimize cross-infection between visitors and prisoners.

How about the homeless shelters? And those homeless on the streets? They can help spreading the virus around.

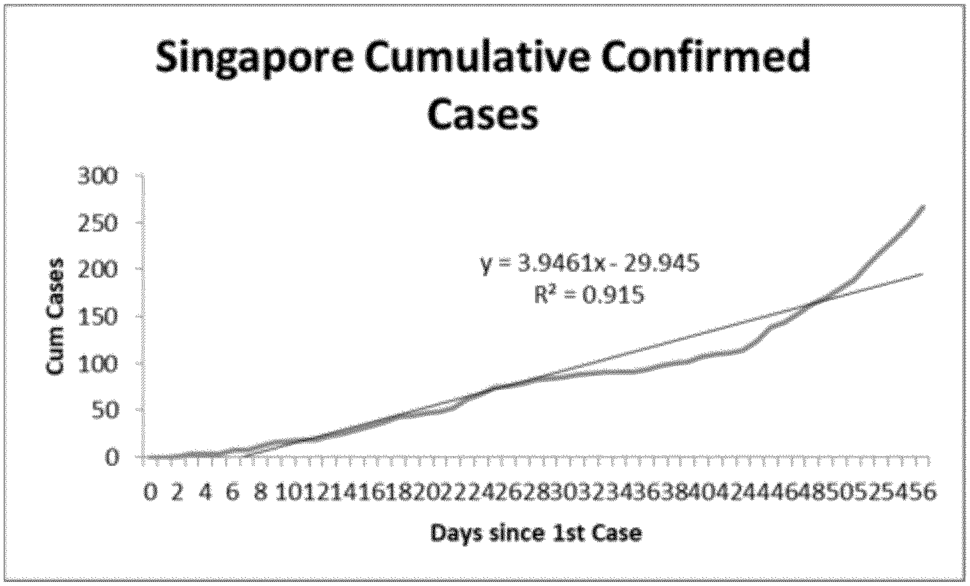
https://newton.isye.gatech.edu/DrLee/

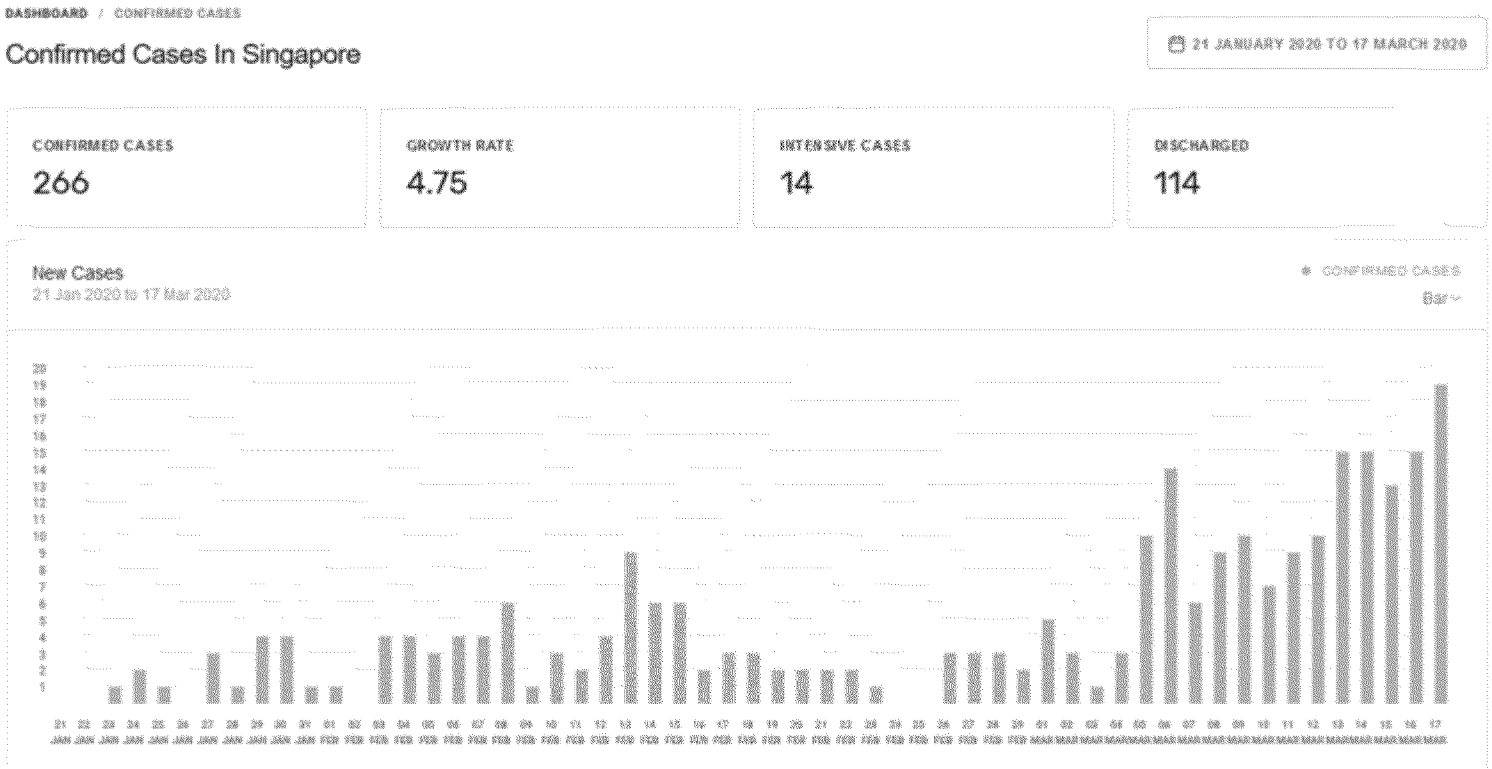
mobile:

Sent with ProtonMail Secure Email.

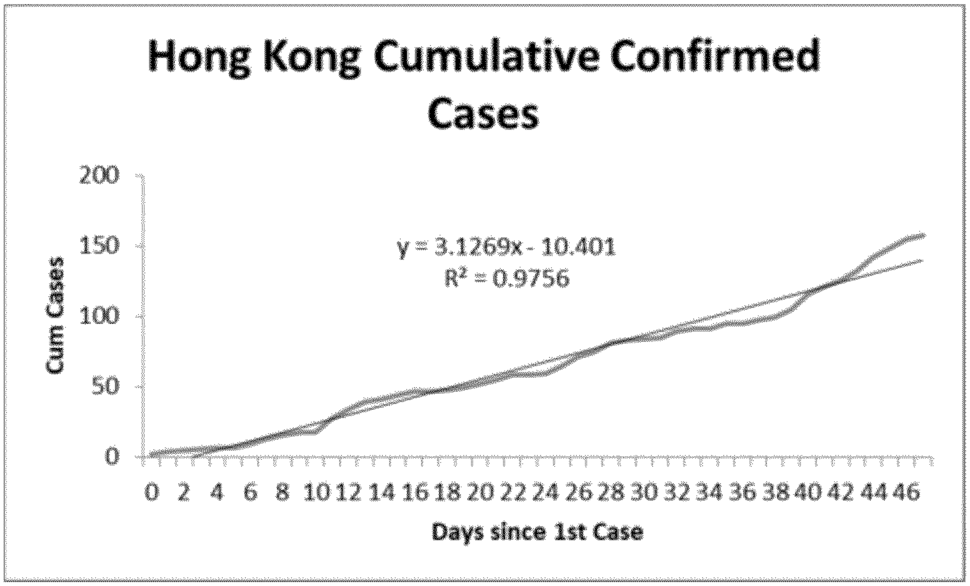
------- Original Message -------
On Tuesday, March 17, 2020 8:31 PM, Carter Mecher wrote:

Singapore heading up over the past 2 weeks (266 cases/0 deaths)





Hong Kong still hanging in there (158 cases/ 4 deaths)



Sent from Mail for Windows 10

From: Carter Mecher
Sent: Tuesday, March 17, 2020 7:41 PM
To: Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deat
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	1

1-Mar	130	2	84		1,694	34	73	1
2-Mar	191	3	120		2,036	52	99	6
3-Mar	212	4	151		2,502	79	103	6
4-Mar	285	4	202		3,089	107	154	11
5-Mar	423	7	248	1	3,858	148	197	12
6-Mar	613	9	517	10	4,636	197	309	15
7-Mar	949	16	613	17	5,833	233	434	19
8-Mar	1,126	19	848	25	7,375	366	544	22
9-Mar	1,412	30	1,231	30	9,172	463	728	27
10-Mar	1,784	33	1,646	35	10,149	631	1,010	31
11-Mar	2,281	49	2,277	55	12,462	827	1,311	38
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	40
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	48
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	58

15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	69
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	87
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*	*104*

Sent from Mail for Windows 10

From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

Channels

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Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

369

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ___________

Cell: ___________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson Carter Mecher Dr. Eva Lee <eva.evalee.lee64@gmail.com>; Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb <bg.richard. William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K.

<mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

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From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO)

<Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar

Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson

Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:

Fax:

Mobile:

https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/

rdarling@patronusmedical.com

https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more

focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson wrote:

> Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?
>
>> On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

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From: Dr. Eva Lee [redacted]
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher [redacted]
Cc: [redacted] Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard [redacted] Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert [redacted] Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN [redacted] Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1

HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Brian Benson Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard

Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee <eva.evalee CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>;

KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson MothersheadtJerry L. <1974USNA@gmail.com>; Brian Benson
Dr. Eva K Lee

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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To: Rob Darling, MD[rdarling@patronusmedical.com]
Cc: Dr. Eva K Carter Brian
Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Dr. Eva Caneva, Duane (DHS.GOV)[duane.caneva@hq.dhs.gov]; eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Baric, Ralph S[rbaric@email.unc.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; Wolfe, Herbert (DHS.GOV)[herbert.wolfe@hq.dhs.gov]; alexander.eastman@hq.dhs.gov[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin (OS/ASPR/IO)[Kevin.Yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; david.a.tarantino@cbp.dhs.gov[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito (FEMA.DHS.GOV)[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis
From: Borio, Luciana[LBorio@iqt.org]
Sent: Wed 3/18/2020 9:23:56 AM (UTC-04:00)
Subject: Re: Red Dawn Responding, Start 16 March

Hi Rob - this was a small uncontrolled study. I can't stress this point enough - but the results are completely meaningless. Completely uninterpretable. This type of study only serves to delay proper trials that can help us find real effective treatments. We are collectively engineered for hope, but we need to quiet that part of our brains (or heart?) and bring out the Spock that lives somewhere inside most of us.

Sent from my iPhone

> On Mar 18, 2020, at 9:13 AM, Rob Darling, MD <rdarling@patronusmedical.com> wrote:
>
> Some promising results with Chloroquine as a treatment for COVID-19? Heard a paper should be released soon.
> https://www.connexionfrance.com/French-news/French-researcher-in-Marseille-posts-successful-Covid-19-coronavirus-drug-trial-results
>
> **Robert G. Darling, MD, FACEP, FFSEM**
> **Founder, Chief Medical Officer**
> **Patronus Medical**
> **San Diego / Washington DC / Los Angeles**
>
> Office:
>
> Fax:
> Mobile:
>
> www.patronusmedical.com
> rdarling@patronusmedical.com

www.LinkedIn.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 9:24 PM Dr. Eva K Lee wrote:

I am counting places with people. How are the prisons doing? I understand Ohio is releasing prisoners to curb the covid-19 virus and to prepare for rooms for quarantine of infected ones. Is there a systematic way to disinfect the sites? How can one minimize cross-infection between visitors and prisoners.

How about the homeless shelters? And those homeless on the streets? They can help spreading the virus around.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Tuesday, March 17, 2020 8:31 PM, Carter Mecher wrote:

Singapore heading up over the past 2 weeks (266 cases/0 deaths)

<F035145703C944789AD2947F44CEFA35.png>

<1ECE760DBAE948A28DB879C59F1C4869.png>

Hong Kong still hanging in there (158 cases/ 4 deaths)

<1072B0121A494781B568F074A1F0AFEC.png>

Sent from Mail for Windows 10

From: Carter Mecher
Sent: Tuesday, March 17, 2020 7:41 PM
To: Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee;

Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum D
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	

23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	1
1-Mar	130	2	84		1,694	34	73	1
2-Mar	191	3	120		2,036	52	99	6
3-Mar	212	4	151		2,502	79	103	6
4-Mar	285	4	202		3,089	107	154	11
5-Mar	423	7	248	1	3,858	148	197	12
6-Mar	613	9	517	10	4,636	197	309	15
7-Mar	949	16	613	17	5,833	233	434	19

8-Mar	1,126	19	848	25	7,375	366	544	22
9-Mar	1,412	30	1,231	30	9,172	463	728	27
10-Mar	1,784	33	1,646	35	10,149	631	1,010	31
11-Mar	2,281	49	2,277	55	12,462	827	1,311	38
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	40
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	48
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	58
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	69
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	87
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*	*10*

Sent from Mail for Windows 10

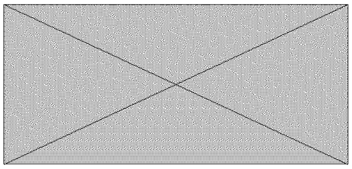
From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; Caneva,

Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.



Channels

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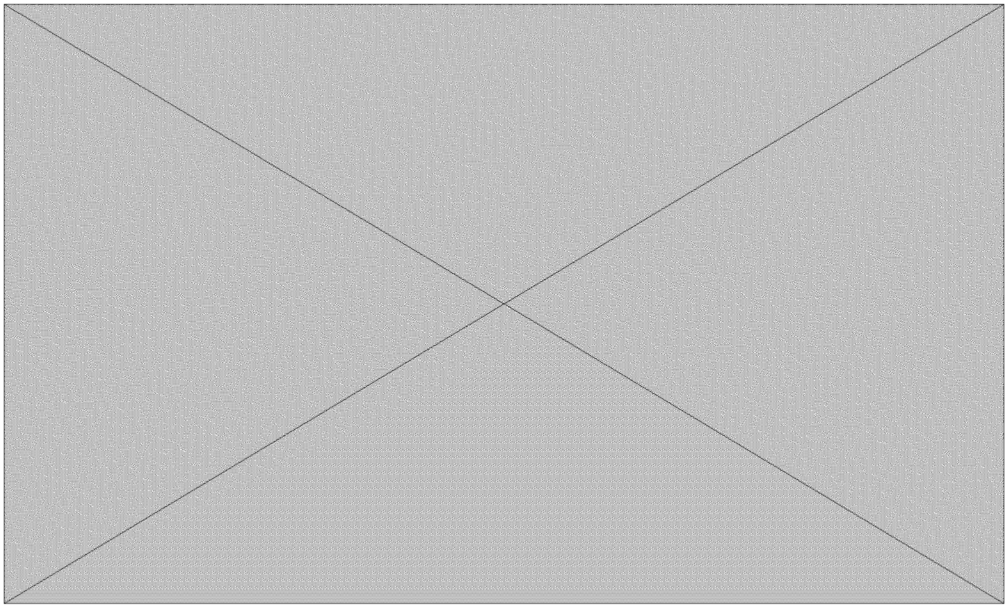
[ ][]

HOME >> CHINA,SPECIAL-COVERAGE

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48



Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ___________

Cell: ___________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson Carter Mecher Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb <bg.richard. William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

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From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee <evalee-gatech@pm.me>
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard. William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:

Fax:

Mobile:

https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/

rdarling@patronusmedical.com

https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

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From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher
Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR)

<John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar

Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson

Brian Benson

<brian. Dr. Eva K Lee <evalee-

Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric;

Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman,

Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb <bg.richard Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee <eva.evalee CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV)

<walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Motherseadt Jerry L. Brian Benson <brian. Dr. Eva K Lee <evalee-

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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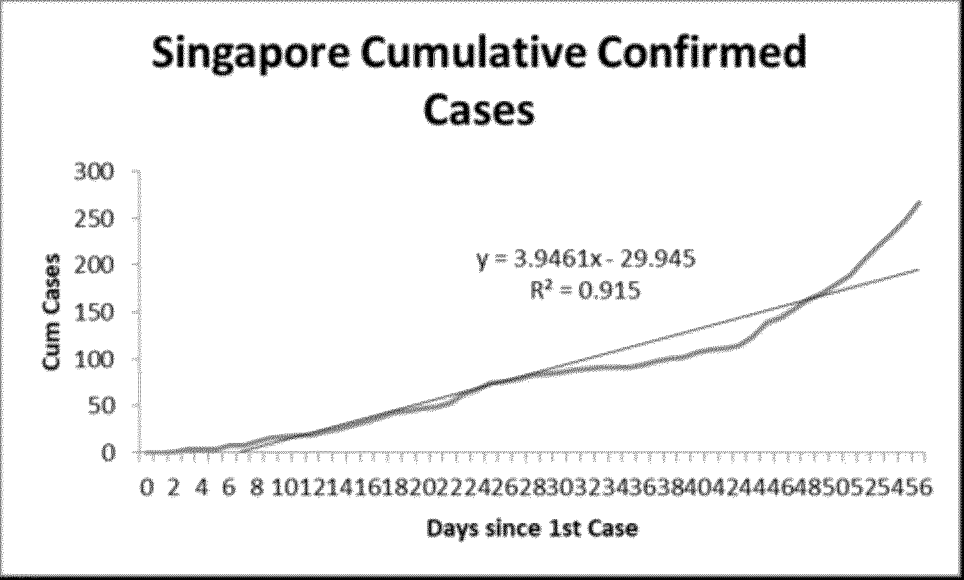
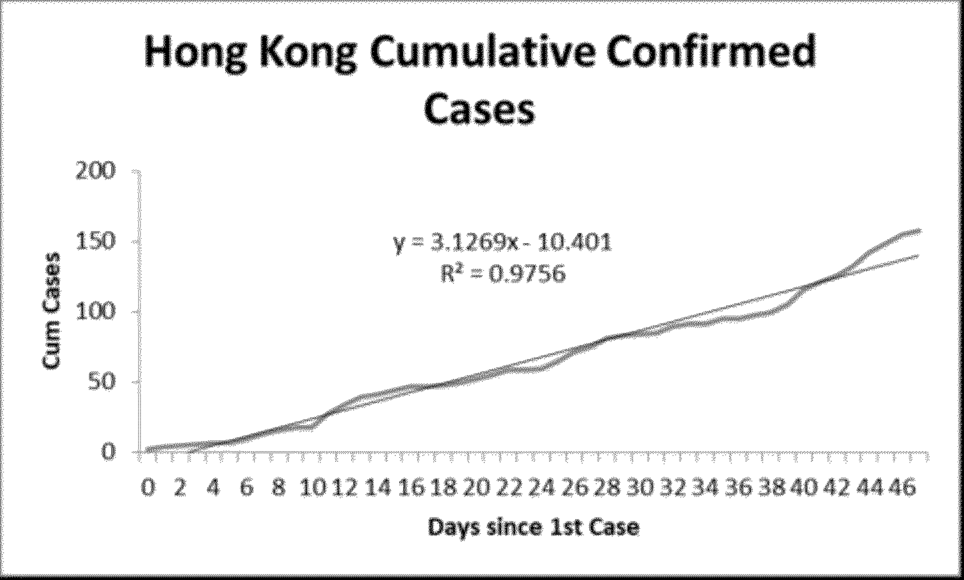

Singapore Cumulative Confirmed Cases
300
250
200
150
100
50
0
Cum Cases
y = 3.9461x - 29.945
R² = 0.915
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56
Days since 1st Case



Hong Kong Cumulative Confirmed Cases
200
150
100
50
0
Cum Cases
y = 3.1269x - 10.401
R² = 0.9756
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46
Days since 1st Case

DASHBOARD / CONFIRMED CASES

Confirmed Cases In Singapore

21 JANUARY 2020 TO 17 MARCH 2020

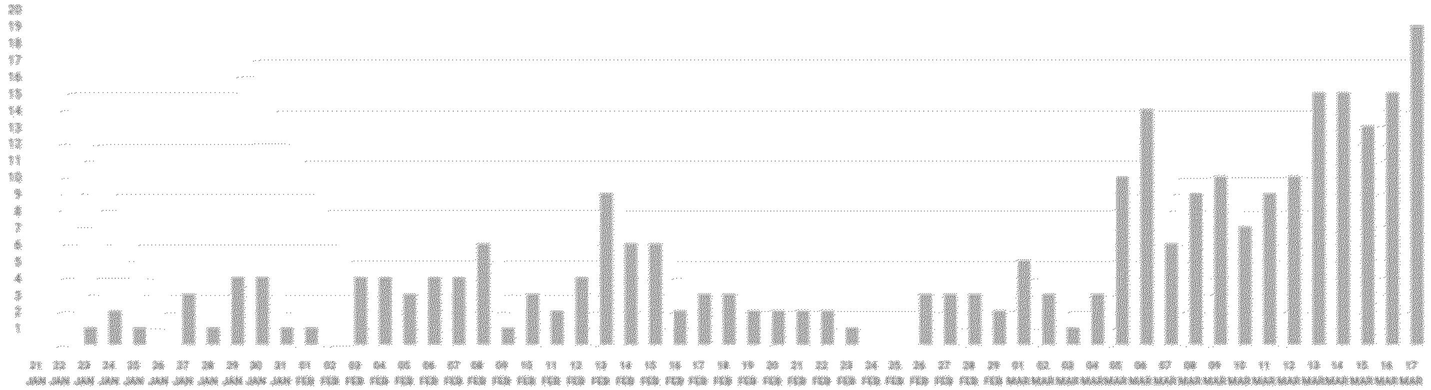
CONFIRMED CASES	GROWTH RATE	INTENSIVE CASES	DISCHARGED
266	4.75	14	114

New Cases

21 Jan 2020 to 17 Mar 2020

CONFIRMED CASES

Bar



To: Borio, Luciana[LBorio@iqt.org]; Rob Darling, MD[rdarling@patronusmedical.com]
Cc: Dr. Eva K Carter Brian
Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Dr. Eva
Caneva, Duane
(DHS.GOV)[duane.caneva@hq.dhs.gov]; eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard
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(OS/ASPR/IO)[Kevin.Yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John
(OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade,
David[David.Wade@hq.dhs.gov]; david.a.tarantino@cbp.dhs.gov[david.a.tarantino@cbp.dhs.gov]; KAUSHIK,
SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott[Scott.Lee@hhs.gov]; Padget, Larry G[PadgetLG@state.gov]; Ryan
Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome
(HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica
(USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts,
Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito
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Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren
Johnston[ljohnston@patronusmedical.com]; Lewis
From: Martin, Gregory J[MartinGJ@state.gov]
Sent: Wed 3/18/2020 9:30:12 AM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March

Lu,
Thank you for that comment.
I have already had patients coming in demanding to be placed on chloroquine, at the recommendation of their doctor, to prevent them from getting infected. Although these small studies are promising we really have to be careful about getting ahead of good science. The panic over NSAID use is another example, since acetaminophen has been sold out in many areas of Europe people are completely wigged out that a dose of ibuprofen will kill their child.
Greg

Gregory J. Martin, MD
Chief, Tropical Medicine – Infectious Diseases
Bureau of Medical Services, US Department of State
2401 E St NW (SA-1)
Washington, DC 20015

MartinGJ@state.gov

From: Borio, Luciana <LBorio@iqt.org>
Sent: Wednesday, 18 March, 2020 09:24
To: Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Dr. Eva K Lee Carter Mecher Brian Benson
Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva Lee
Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>;

eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <David.Wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Hi Rob - this was a small uncontrolled study. I can’t stress this point enough - but the results are completely meaningless. Completely uninterpretable. This type of study only serves to delay proper trials that can help us find real effective treatments. We are collectively engineered for hope, but we need to quiet that part of our brains (or heart?) and bring out the Spock that lives somewhere inside most of us.

Sent from my iPhone

On Mar 18, 2020, at 9:13 AM, Rob Darling, MD <rdarling@patronusmedical.com> wrote:

Some promising results with Chloroquine as a treatment for COVID-19? Heard a paper should be released soon.
https://www.connexionfrance.com/French-news/French-researcher-in-Marseille-posts-successful-Covid-19-coronavirus-drug-trial-results

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

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Fax:
Mobile:

www.patronusmedical.com
rdarling@patronusmedical.com
www.LinkedIn.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 9:24 PM Dr. Eva K Lee wrote:
I am counting places with people. How are the prisons doing? I understand Ohio is releasing prisoners to curb the

covid-19 virus and to prepare for rooms for quarantine of infected ones. Is there a systematic way to disinfect the sites? How can one minimize cross-infection between visitors and prisoners.

How about the homeless shelters? And those homeless on the streets? They can help spreading the virus around.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Tuesday, March 17, 2020 8:31 PM, Carter Mecher wrote:

Singapore heading up over the past 2 weeks (266 cases/0 deaths)

<F035145703C944789AD2947F44CEFA35.png>

<1ECE760DBAE948A28DB879C59F1C4869.png>

Hong Kong still hanging in there (158 cases/ 4 deaths)

<1072B0121A494781B568F074A1F0AFEC.png>

Sent from Mail for Windows 10

From: Carter Mecher
Sent: Tuesday, March 17, 2020 7:41 PM
To: Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum D
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	1
1-Mar	130	2	84		1,694	34	73	1
2-Mar	191	3	120		2,036	52	99	6
3-Mar	212	4	151		2,502	79	103	6
4-Mar	285	4	202		3,089	107	154	11
5-Mar	423	7	248	1	3,858	148	197	12
6-Mar	613	9	517	10	4,636	197	309	15
7-Mar	949	16	613	17	5,833	233	434	19
8-Mar	1,126	19	848	25	7,375	366	544	22
9-Mar	1,412	30	1,231	30	9,172	463	728	27
10-Mar	1,784	33	1,646	35	10,149	631	1,010	31
11-Mar	2,281	49	2,277	55	12,462	827	1,311	38

12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	40
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	48
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	58
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	69
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	87
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*	*10*

Sent from Mail for Windows 10

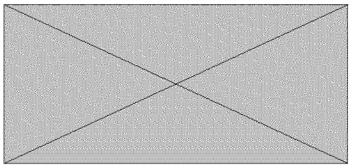
From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing

for COVID last Thursday. Thoughts please?

See Germano article he sent below.



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HOME >> **CHINA,SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

369

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO)

<Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ____________

Cell: ____________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson Carter Mecher Dr. Eva Lee ____________________ Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN ______________________ Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann ________________
Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

Get Outlook for Android

From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee <evalee-gatech@pm.me>
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard. William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
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Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
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https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson [redacted] wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

Get Outlook for Android

From: Dr. Eva Lee [redacted]
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher [redacted]
Cc: [redacted] Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard [redacted] Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert [redacted] Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1 [redacted] Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH

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Brian Benson
<brian. Dr. Eva K Lee <evalee-

Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher
_______________ wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David;

CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher ____________ wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb <bg.richard Rob Darling, MD <rdarling@patronusmedical.com>; William Lang

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Subject: Red Dawn Responding, Start 16 March

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Cc: Borio, Luciana[LBorio@iqt.org]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva K Carter Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Dr. Eva Caneva, Duane (DHS.GOV)[duane.caneva@hq.dhs.gov]; eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Baric, Ralph S[rbaric@email.unc.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Walters, William[WaltersWA2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; Wolfe, Herbert (DHS.GOV)[herbert.wolfe@hq.dhs.gov]; alexander.eastman@hq.dhs.gov[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin (OS/ASPR/IO)[Kevin.Yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; david.a.tarantino@cbp.dhs.gov[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott[Scott.Lee@hhs.gov]; Padget, Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito (FEMA.DHS.GOV)[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis
To: Martin, Gregory J[MartinGJ@state.gov]
From: Richard
Sent: Wed 3/18/2020 10:25:24 AM (UTC-04:00)
Subject: Re: Red Dawn Responding, Start 16 March

Lot of questions about efficacy of long acting hand sanitizers in general, and in particular against corona viruses. (I know that there is little, if any, work against COVID 19, a little more against SARS/MERS, and some against the old fashion cold corona viruses). Can anybody point me towards anything besides alcohol based hand sanitizers that only last for minutes. I would think that a comprehensive report must have been done somewhere but can't find it. More often what I read is answers to the questions that weren't asked. Thx

Sent from my iPad

> On Mar 18, 2020, at 9:30 AM, Martin, Gregory J <MartinGJ@state.gov> wrote:
>
> Lu,
> Thank you for that comment.
> I have already had patients coming in demanding to be placed on chloroquine, at the recommendation of their doctor, to prevent them from getting infected. Although these small studies are promising we really have to be careful about getting ahead of good science. The panic over NSAID use is another example, since acetaminophen has been sold out in many areas of Europe people are completely wigged out that a dose of ibuprofen will kill their child.
> Greg
>
> ***Gregory J. Martin, MD***
> ***Chief, Tropical Medicine – Infectious Diseases***
> Bureau of Medical Services, US Department of State
> 2401 E St NW (SA-1)
> Washington, DC 20015
>
> MartinGJ@state.gov
> <image003.png>

From: Borio, Luciana <LBorio@iqt.org>
Sent: Wednesday, 18 March, 2020 09:24
To: Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Dr. Eva K Lee Carter Mecher Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <David.Wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Hi Rob - this was a small uncontrolled study. I can't stress this point enough - but the results are completely meaningless. Completely uninterpretable. This type of study only serves to delay proper trials that can help us find real effective treatments. We are collectively engineered for hope, but we need to quiet that part of our brains (or heart?) and bring out the Spock that lives somewhere inside most of us.

Sent from my iPhone

> On Mar 18, 2020, at 9:13 AM, Rob Darling, MD <rdarling@patronusmedical.com> wrote:
>
> Some promising results with Chloroquine as a treatment for COVID-19? Heard a paper should be released soon.
> https://www.connexionfrance.com/French-news/French-researcher-in-Marseille-posts-successful-Covid-19-coronavirus-drug-trial-results

Robert G. Darling, MD, FACEP, FFSEM
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www.LinkedIn.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 9:24 PM Dr. Eva K Lee wrote:

I am counting places with people. How are the prisons doing? I understand Ohio is releasing prisoners to curb the covid-19 virus and to prepare for rooms for quarantine of infected ones. Is there a systematic way to disinfect the sites? How can one minimize cross-infection between visitors and prisoners.

How about the homeless shelters? And those homeless on the streets? They can help spreading the virus around.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Tuesday, March 17, 2020 8:31 PM, Carter Mecher wrote:

Singapore heading up over the past 2 weeks (266 cases/0 deaths)

<F035145703C944789AD2947F44CEFA35.png>

<1ECE760DBAE948A28DB879C59F1C4869.png>

Hong Kong still hanging in there (158 cases/ 4 deaths)

<1072B0121A494781B568F074A1F0AFEC.png>

Sent from Mail for Windows 10

From: Carter Mecher
Sent: Tuesday, March 17, 2020 7:41 PM
To: Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com;

Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	
1-Mar	130	2	84		1,694	34	73	

2-Mar	191	3	120		2,036	52	99	
3-Mar	212	4	151		2,502	79	103	
4-Mar	285	4	202		3,089	107	154	
5-Mar	423	7	248	1	3,858	148	197	
6-Mar	613	9	517	10	4,636	197	309	
7-Mar	949	16	613	17	5,833	233	434	
8-Mar	1,126	19	848	25	7,375	366	544	
9-Mar	1,412	30	1,231	30	9,172	463	728	
10-Mar	1,784	33	1,646	35	10,149	631	1,010	
11-Mar	2,281	49	2,277	55	12,462	827	1,311	
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*	

Sent from Mail for Windows 10

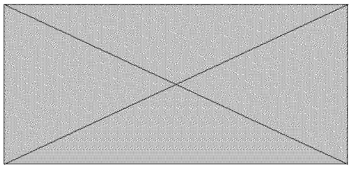
From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO);

Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.



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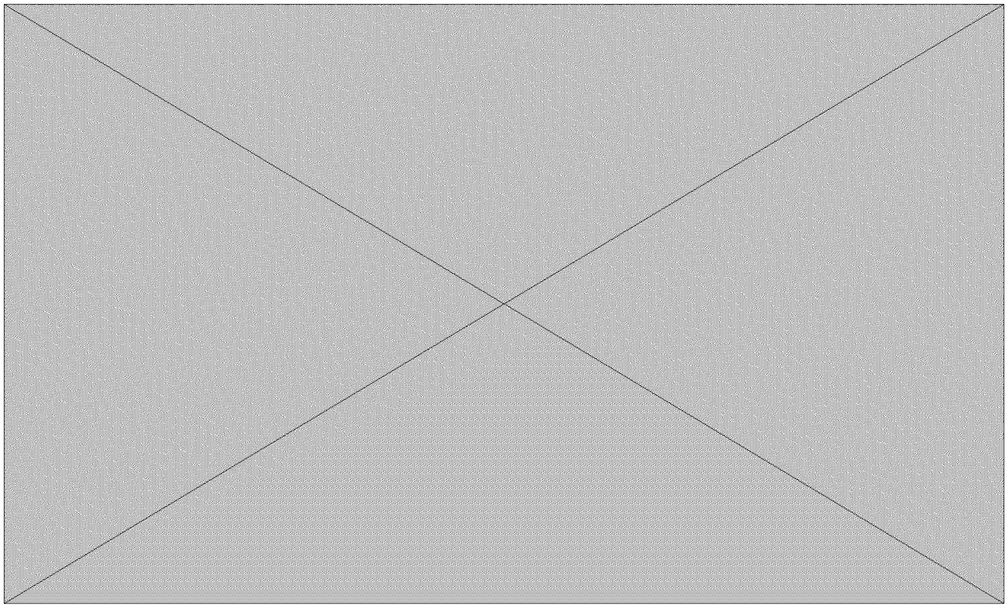
HOME >> **CHINA,SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48



Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ____________

Cell: ____________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>

Cc: Brian Benson Carter Mecher
Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

Get Outlook for Android

From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara

<tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee
<eva.evalee
Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric
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William Lang <wlang@worldclinic.com>; Mecher, Carter
<Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett
<richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker
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<MartinGJ@state.gov>; Walters, William (STATE.GOV)
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<Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow,
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<ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

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Fax:
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https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
rdarling@patronusmedical.com
https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

Get Outlook for Android

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher
Cc:
Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER

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<rajeev.venkayya@takeda.com>; Ronny Jackson
<ronny Brian Benson
<brian. Dr. Eva K Lee <evalee-

Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png
>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

> Worth the read.
>
> https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295
>
> Sent from Mail for Windows 10
>
> **From:**
>
> **Sent:** Monday, March 16, 2020 11:58 PM
>
> **To:** 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio,

Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee

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Jackson <ronny
MothersheadtJerry L.
Brian Benson
<brian. Dr. Eva K Lee

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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To: Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]
Cc: Tracey McNamara[tmcNamara@westernu.edu]; Dr. Eva K Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva Caneva, Duane (DHS.GOV)[duane.caneva@hq.dhs.gov]; eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; Wolfe, Herbert (DHS.GOV)[herbert.wolfe@hq.dhs.gov]; alexander.eastman@hq.dhs.gov[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin (OS/ASPR/IO)[Kevin.Yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; david.a.tarantino@cbp.dhs.gov[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito (FEMA.DHS.GOV)[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis
From: Carter
Sent: Wed 3/18/2020 10:38:48 AM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March
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6008B092F65541B08C5E30632F6DDEF4.png
7494D5123DB14D718A46D2E468250B62.png

Just passing something along from VA.

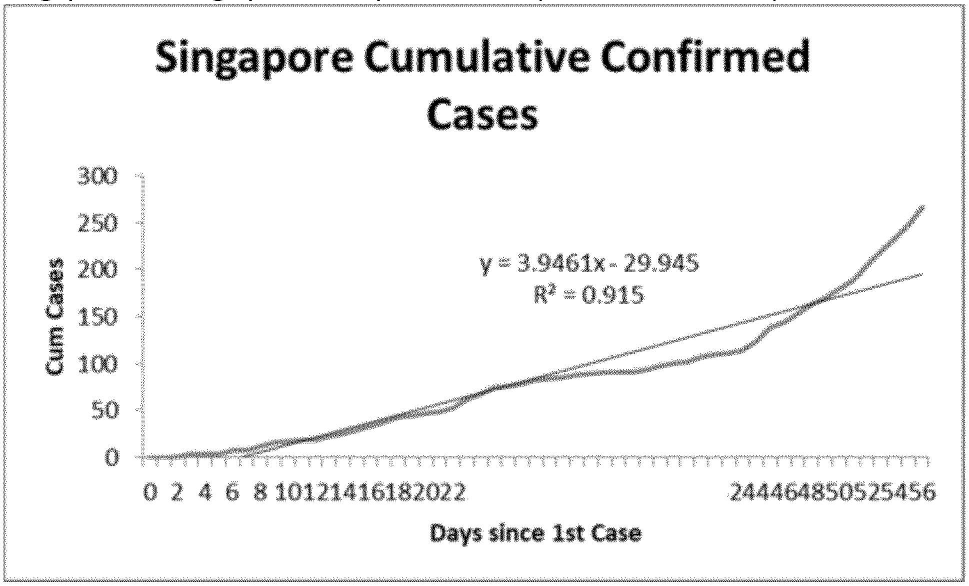
People in VA are thinking about communicating to veterans in a way they understand that is unique to veterans. Anyone who was in the military knows what it means to protect your 6 (your back). 6 is also the amount space we want around us to reduce transmission. VA wants to let veterans know we are watching their 6 in more ways than 1. We are doing everything we are doing to watch their 6 (both their back and to protect the 6' around them to reduce the chance that they become ill). Pretty much the simplest rule we can tell everyone about operationalizing social distancing is to watch your 6.

Sent from Mail for Windows 10

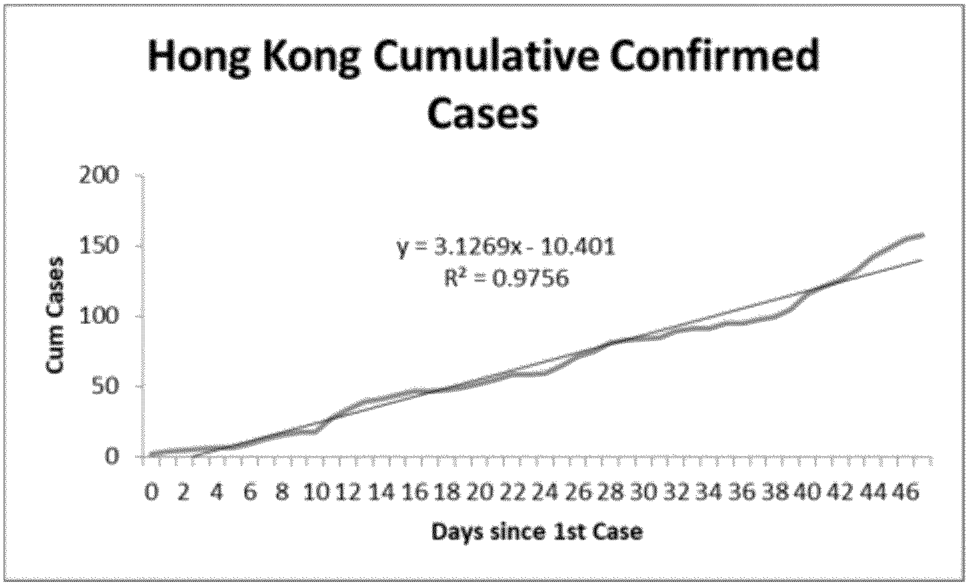
From: Carter Mecher
Sent: Tuesday, March 17, 2020 8:31 PM
To: Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim

McLeod; Lauren Johnston; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

Singapore heading up over the past 2 weeks (266 cases/0 deaths)



Hong Kong still hanging in there (158 cases/ 4 deaths)



Sent from Mail for Windows 10

From: Carter Mecher
Sent: Tuesday, March 17, 2020 7:41 PM
To: Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	

25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	1
1-Mar	130	2	84		1,694	34	73	1
2-Mar	191	3	120		2,036	52	99	6
3-Mar	212	4	151		2,502	79	103	6
4-Mar	285	4	202		3,089	107	154	11
5-Mar	423	7	248	1	3,858	148	197	12
6-Mar	613	9	517	10	4,636	197	309	15
7-Mar	949	16	613	17	5,833	233	434	19
8-Mar	1,126	19	848	25	7,375	366	544	22
9-Mar	1,412	30	1,231	30	9,172	463	728	27
10-Mar	1,784	33	1,646	35	10,149	631	1,010	31
11-Mar	2,281	49	2,277	55	12,462	827	1,311	38
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	40
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	48
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	58
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	69
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	87
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*	*104*

Sent from Mail for Windows 10

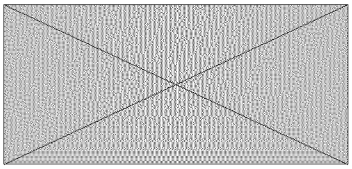
From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN;

jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.



Channels

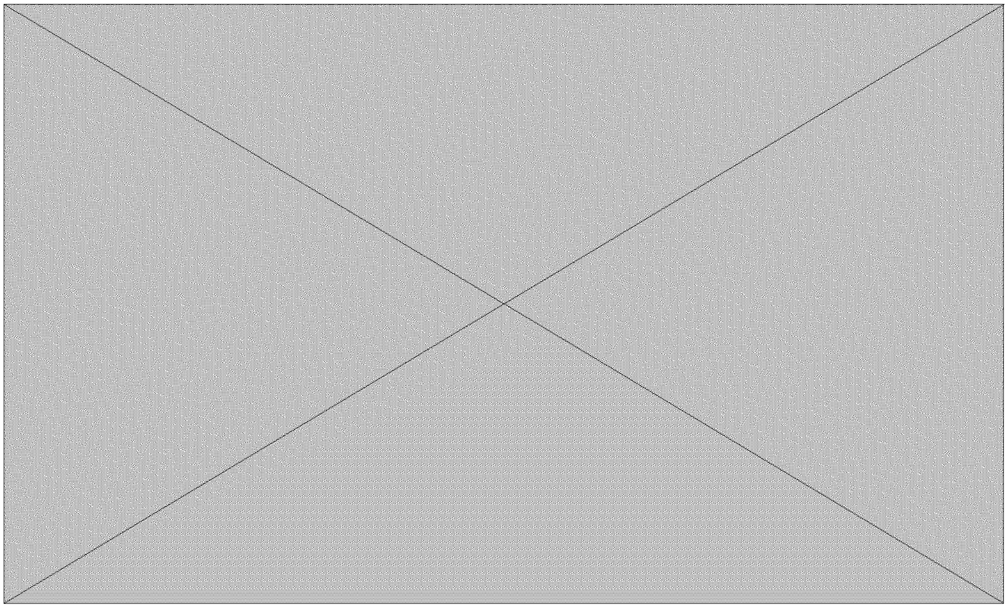
[ ][]

HOME >> **CHINA,SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

369



Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs

and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient... That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager
Assistant Secretary for Preparedness and Response
Office: ___________
Cell: ___________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson Carter Mecher Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.
Tracey

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From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee

Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
rdarling@patronusmedical.com
https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Tuesday, March 17, 2020 12:42 PM, Brian Benson wrote:

> Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?
>
> On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:
>
> When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?
> What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.
> Tracey
>
> Get Outlook for Android
>
> ---
>
> **From:** Dr. Eva Lee <eva.evalee.lee64@gmail.com>
> **Sent:** Tuesday, March 17, 2020 7:03:58 AM
> **To:** Carter Mecher
> **Cc:** 1974usna@gmail.com Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR)

<Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Brian Benson Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 9:09 AM
To: Carter Mecher
Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:
Sent: Monday, March 16, 2020 11:58 PM
To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'
Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

---

From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Sent: Monday, March 16, 2020 10:54 PM
To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L

<llogan@cvm.tamu.edu>; LLogandakar
Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson
MothersheadtJerry L.
<1974USNA@gmail.com>; Brian Benson Dr.
Eva K Lee
Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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To: Carter Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]
Cc: Tracey McNamara[tmcNamara@westernu.edu]; Dr. Eva K Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva Caneva, Duane (DHS.GOV)[duane.caneva@hq.dhs.gov]; eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@HHS.GOV]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; Wolfe, Herbert (DHS.GOV)[herbert.wolfe@hq.dhs.gov]; alexander.eastman@hq.dhs.gov[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin (OS/ASPR/IO)[Kevin.Yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; david.a.tarantino@cbp.dhs.gov[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito (FEMA.DHS.GOV)[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis
From: Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]
Sent: Wed 3/18/2020 11:25:25 AM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March
Duty-to-Plan.pdf

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher
Sent: Tuesday, March 17, 2020 7:42 PM
To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR)

<Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	1
1-Mar	130	2	84		1,694	34	73	1
2-Mar	191	3	120		2,036	52	99	6
3-Mar	212	4	151		2,502	79	103	6

4-Mar	285	4	202		3,089	107	154	11
5-Mar	423	7	248	1	3,858	148	197	12
6-Mar	613	9	517	10	4,636	197	309	15
7-Mar	949	16	613	17	5,833	233	434	19
8-Mar	1,126	19	848	25	7,375	366	544	22
9-Mar	1,412	30	1,231	30	9,172	463	728	27
10-Mar	1,784	33	1,646	35	10,149	631	1,010	31
11-Mar	2,281	49	2,277	55	12,462	827	1,311	38
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	40
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	48
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	58
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	69
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	87
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*	*104*

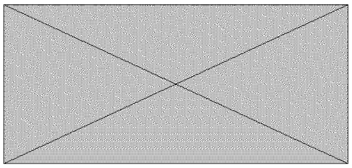
Sent from Mail for Windows 10

From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.



Channels

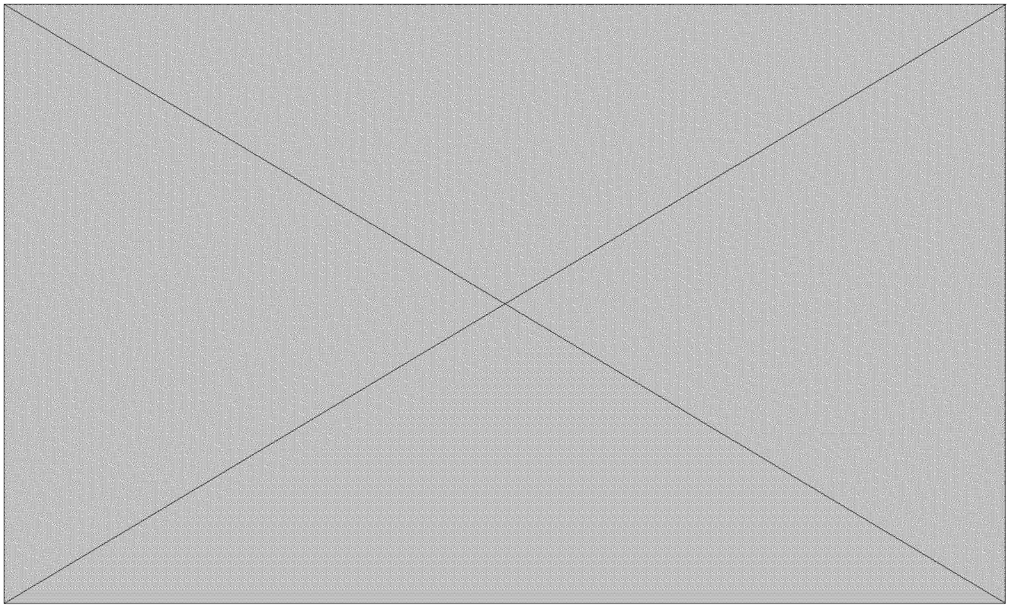
[ ][]

HOME >> **CHINA,SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

369



Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient... That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager
Assistant Secretary for Preparedness and Response
Office: ___________
Cell: ___________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson Carter Mecher Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@g HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.
Tracey

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From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>;

jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
rdarling@patronusmedical.com
https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Tuesday, March 17, 2020 12:42 PM, Brian Benson wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

> On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?
What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.
Tracey

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From: Dr. Eva Lee <eva.evalee.lee64@gmail.com>
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher
Cc: 1974usna@gmail.com Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_ Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L

<llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Brian Benson Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 9:09 AM
To: Carter Mecher
Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald

W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN;
Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:
Sent: Monday, March 16, 2020 11:58 PM
To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'
Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

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DISCUSSION PAPER

Duty to Plan: Health Care, Crisis Standards of Care, and Novel Coronavirus SARS-CoV-2

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ABSTRACT | *The novel coronavirus SARS-CoV-2 and resulting disease state COVID-19 pose a direct threat to an over-burdened U.S. medical care system and supporting supply chains for medications and materials. The principles of crisis standards of care (CSC) initially framed by the Institute of Medicine in 2009 ensure fair processes are in place to make clinically informed decisions about scarce resource allocation during an epidemic. This may include strategies such as preparing, conserving, substituting, adapting, re-using, and re-allocating resources. In this discussion paper for health care planners and clinicians, the authors discuss the application of CSC principles to clinical care, including personal protective equipment, critical care, and outpatient and emergency department capacity challenges posed by a coronavirus or other major epidemic or pandemic event. Health care facilities should be developing tiered, proactive strategies using the best available clinical information and building on their existing surge capacity plans to optimize resource use in the event the current outbreak spreads and creates severe resource demands. Health care systems and providers must be prepared to obtain the most benefit from limited resources while mitigating harms to individuals, the health care system, and society.*

Introduction

A major epidemic or pandemic can overwhelm the capacity of outpatient facilities, emergency departments (EDs), hospitals, and intensive care units, leading to critical shortages of staff, space, and supplies with serious implications for patient outcomes.

In the late summer of 2009, with an H1N1 pandemic looming, the Institute of Medicine (IOM, and as of 2015, the National Academy of Medicine), at the request of the Office of the Assistant Secretary for Preparedness and Response (ASPR) at the U.S. Department of Health and Human Services (HHS), convened an ad hoc committee to generate a letter report addressing how resource allocation and triage decisions could be fairly made under crisis conditions [1]. The 2009 IOM letter report *Guidance for Establishing Crisis Standards of Care for Use in Disaster Situations: A Letter Report* was followed by a more thorough exploration of these concepts in 2012 and the creation of a toolkit for planners focused on specific disaster event indicators and triggers in 2013 [2,3].

Ten years later, in the early months of 2020, another potential pandemic looms. This time it is due to the emergence of a novel coronavirus (SARS-CoV-2, causing COronaVIrus Disease 2019 or COVID-19), a beta coronavirus similar to the severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) coronaviruses. The principles of Crisis Standards of Care (CSC) are as relevant now as they were a decade ago. It is simply too early to say, at the time of this writing, what the course of the COVID-19 epidemic will be, although its rapid geographic spread within China, concomitant meteoric rise in the number

of persons affected, along with the detection of the virus in more than two dozen countries, raises the specter of a global pandemic. More people were reported dead in the first month after the SARS-CoV-2 virus was recognized than died during the 8 months that SARS circumnavigated the globe [4].

Proactive planning, in which leaders anticipate and take steps to address worst-case scenarios, is the first link in the chain to reducing morbidity, mortality, and other undesirable effects of an emerging disaster. It is vital that the principles and practices of crisis care planning guide public health and health care system preparations. This discussion paper summarizes some key areas in which CSC principles should be applied to COVID-19 planning, with an emphasis on health care for a large number of patients. Hospitals routinely utilize selected principles of CSC to deal with seasonal outbreaks, lack of bed availability, and drug shortages, but a potential pandemic requires a deeper understanding and application of CSC.

Reduced to its fundamental elements, CSC describe a planning framework based on strong ethical principles, the rule of law, the importance of provider and community engagement, and steps that permit the equitable and fair delivery of medical services to those who need them under resource-constrained conditions. CSC are based on the following key principles [1]:

- Fairness
- Duty to Care
- Duty to Steward Resources
- Transparency
- Consistency
- Proportionality
- Accountability

Since the release of the 2009 IOM letter report, a "duty to plan" has been espoused by leaders in the disaster preparedness and response community and recognized in legal decisions in the setting of hurricane evacuation and sheltering [5,6,7]. This duty is worth

Box 1 | Reflections on Crisis Standards of Care Implementation Efforts

The authors have identified the following key lessons from crisis standards of care (CSC) implementation efforts that have relevance in planning to address COVID-19:

- Significant attention has been given to the development of "ventilator triage" decision tools and processes during CSC planning when the main challenges have been adapting to staff and supply shortages.
- Scoring systems developed for sepsis (e.g., Sequential Organ Failure Assessment [SOFA] scores) were found in the 2009 swine flu pandemic to have far less predictive value for viral pneumonias than assumed, and should not be used to exclude patients from receiving resources (though they may have a role in comparing relative prognosis between patients). [10,11,12]
- A key focus of CSC is ensuring that incident command processes and administrative decision-making processes integrate clinical input so that the resources of the medical care system are focused on how to safely maintain critical health care delivery of vital services (e.g., surgical care, critical care, dialysis, etc.).
- Health care facilities and providers will not have the option to avoid crisis care decisions when the situation arises. Many facilities and emergency medical services (EMS) agencies have been waiting on state-level actions or plans rather than planning at the health care facility level.
- Many hospitals have failed to maximize their conventional (usual, customary care) and contingency (functionally equivalent care) planning. Ensuring the integration of crisis care into existing surge capacity plans rather than describing such plans as a separate entity is important for success. "Extreme surge" involves significant adaptations of staff, space, and use of supplies that should be anticipated and planned.
- The health care coalition, a regional entity that incorporates hospitals, local public health agencies, EMS, and emergency management agencies, is a critical component of both planning and response. Ensuring the consistency of care across the coalition should be a goal both ethically and practically during a disaster event.

SOURCE: Developed by authors

Box 2 | Strategies for Scarce Resource Situations

Strategies to consider when addressing a scarce resource situation:

- **Prepare** – e.g., anticipate challenges, develop plans, stockpile materials
- **Conserve** – implement conservation strategies for supplies in shortage or anticipated shortage to ensure the minimum impact/compromise possible (e.g., determining "at-risk" groups with priority for therapies in shortage and overall strategies to conserve use of oxygen delivery devices or personal protective equipment)
- **Substitute** – provide an equivalent or near equivalent medication or delivery device
- **Adapt** – use of equipment for alternative purposes (e.g., anesthesia machine as a ventilator)
- **Re-use** – plan to re-use a wide variety of materials after appropriate disinfection or sterilization (may include oxygen delivery devices, for example)
- **Re-allocate** – if no alternatives, remove a resource from one area/patient and allocate to another who has a higher likelihood of benefit (e.g., triage of scarce resources such as Extra-Corporeal Membrane Oxygenation [ECMO] or ventilators)

NOTE: The application of these strategies across a wide range of situations, including staffing, medication, and critical care shortages, is available in a card set published by the Minnesota Department of Health [12].

SOURCES: Adapted from Hick et al., 2009 [39] and IOM, 2012 [2].

highlighting, as a failure to plan for scarce resource situations may lead to the inappropriate application of CSC, wasted resources, inadvertent loss of life, loss of trust, and triage/rationing decisions being made unnecessarily. This will force poor choices on health care providers who will already be markedly limited in their ability to deliver care.

Many lessons were learned during the planning and response to the 2009 H1N1 influenza pandemic and other incidents, including the U.S. government response to the earthquake in Haiti, the Ebola virus in West Africa, and the response to Hurricane Maria that could be applied to planning for this emerging coronavirus. In November 2019, not knowing a novel coronavirus was about to emerge, a broad spectrum of stakeholders convened at a National Academies workshop to discuss these lessons learned and the future of CSC planning (see *Box 1*) [8], including the application of CSC principles and processes for non-disaster shortages [9].

The following sections will focus on key areas of health care planning for COVID-19 and encourage the application of the strategies from the CSC letter report (see *Box 2*) to this process. An excellent additional resource for pandemic planning is the Healthcare Coalition Influenza Pandemic Checklist [13] as well as the hospital CSC appendix to the Minnesota CSC Framework [14]. Also, the U.S. Centers for Disease Control and Prevention (CDC) and the National Institute for Occupational Safety and Health (NIOSH) have developed strategies for extending the supply of N95 respirators, which were in critical shortage in the 2009 influenza pandemic. Supplies are already stressed in China and shortages are likely in the United States if COVID-19 becomes a true pandemic [15,16]. Deciding how best to provide care within severe supply constraints should be done in alignment with the CSC principle of proportionality—the risks of compromising standards in a given instance should be weighed against the need to do so to optimize benefits to patients, caregivers, and the community.

System of Systems

CSC must be applied across all levels of the health care system horizontally (virtual, outpatient, inpatient) and vertically (hospital, health care coalition, state/region, federal) with plans to maximize services and capacity while sharing information, leveraging resources, and distributing patients to ensure the greatest equity and consistency of care.

The primary aim of CSC planning is not to provide a process to make triage decisions such as withholding or reallocating potentially lifesaving resources from one person or group to another who might benefit more. The aim is to have processes in place to manage resources well enough to avoid those situations.

Health care coalitions (public health, health care, emergency management, and emergency medical ser-

vices [EMS]) play an integral role in both planning and response [17]:

- Public health agencies provide public messaging on when to seek care; public health laboratory response; epidemiology; non-pharmaceutical interventions such as social distancing, closure of schools, and vaccine allocation and distribution; and a joint role with health care facilities and emergency management agencies to coordinate alternate care delivery, including the establishment of alternate care sites. These are generally defined as unregulated sites within the community that can be adopted for the delivery of basic care to patients. They may include locations such as gymnasiums and other large spaces, and it is understood that the level of care delivered will not approach the level provided in a hospital.
- Emergency management agencies can provide incident command structure, resources, and local and state declarations and actions/orders that may greatly facilitate the response. They may also provide transportation, workforce/volunteers, and other assets.
- Health care coalitions must coordinate information and response strategies within their geographic area [18], including decisions about expanded or alternate care delivery systems and a process for managing and de-conflicting resource requests (so that if multiple requests for the same asset in shortage [e.g., N95 masks] are received that there is a way to fairly allocate them). This may include working with distributors or public agencies, depending on the source of the materials.
- Based on the strategies identified, facilities and coalition partners may monitor data that can act as "indicators" of pending problems or "triggers" that prompt a change in a strategy. For example, the rapidly declining availability of critical care beds may be an indicator to consider a regional referral system, deferral of elective procedures, and other adjustments. A "trigger" point for implementing these changes may occur when there are no more ventilators available at a local hospital or regionally. Additional information on indicators and triggers, as well as tables for public health, hospital, EMS, and emergency management strategies and tactics during a pandemic event are available in the IOM 2013 report *Crisis Standards of Care: A Toolkit for Indicators and Triggers* [3]. A few examples are provided in *Table 1*.
- Finally, health care coalitions provide a platform for clinical coordination between providers through constructs such as a Regional Disaster Medical Advisory Committee (RDMAC) [2]. In some cases, clinical and other coordination may occur at a regional level or state level incorporating multiple coalitions (and even multiple states) [19]. Depending on the geography, this may provide an opportunity for improved clinical information sharing and policy coordination or even allow for a regional approach to clinical care provision (e.g., regional approach to Extra-Corporeal Membrane Oxygenation [ECMO] services) or a referral "gateway" process for community hospitals seeking to transfer patients with specialty needs when multiple tertiary centers are at capacity.

Critical care saturation at referral centers may result in community hospitals not accustomed to caring for patients on Bi-level Positive Airway Pressure (BiPAP) or mechanical ventilation having to provide these services with the assistance of remote telemedicine or telephone consultant support. Sources of critical care expertise and telemedicine systems need to be identified in advance.

Rural hospitals may also contribute to inpatient capacity for stable patients that can be transferred from tertiary centers ("two-way flow"). For example, a critical access hospital with a capacity of 20 and an average daily census of 5 may not contribute greatly on its own, but 10 similar hospitals can contribute 150 beds in total, though the capabilities and staffing of these facilities must be carefully considered when transferring patients.

Any coordination activity that promotes consistency of care, access to care, and communication may be considered, though in the setting of a transmissible infectious disease like COVID-19, in-person meetings may need to be discouraged in favor of virtual meetings.

The remainder of this discussion paper will focus on clinical care beginning at the provider level and then consider EMS, outpatient, alternate care delivery, and then inpatient care with a deliberate focus on critical care. Critical care is likely to be the most consequentially impacted resource due to the current lack of vaccine or specific treatment and the likely long clinical course.

Table 1 | Example Indicators, Triggers, and Strategies

Indicator	Trigger	Selected Strategies
Community cases (confirmed or ED/clinic volumes)	Sustained community-wide transmission	Institute enhanced infection control techniques, separate suspect cases from other patients, and augment patient flow in clinics and EDs
AIIR rooms	No AIIR rooms available	Convert to semi-private rooms if possible, cohort cases in unit with restricted access and adjusted airflow, and/or add in-room HEPA filtration units
Manufacturer/distributor information and facility supply chain	Supply/medication shortage	Implement PPE, medication, or supply conservation, adaptation, or other procedures according to items in shortage and impact
Unit staffing - needs versus available, staff absenteeism (ill or furloughed)	Unable to maintain usual staffing	Implement alternative staffing models, provide child care, housing, and other staff support, and consider limitation of elective or highly intensive treatments
Clinic and ED volume	Threshold for facility (wait time > X hours, volume > Y/24 hours)	Implement plans for triage and out of hospital care using tele-health resources, "fast track" services, and templated visits
Clinic requests for appointment, ED left without care percentage, wait times, admits boarding in ED	Significant delays in access to care due to demand	Repurpose specialty clinics to acute care, use of alternate care sites / systems for minor illness or non-ambulatory care depending on needs
ICU census, facility, and region	No available ICU beds	Regional ICU referral process, provide positive pressure ventilation on other units, suspend elective surgeries, and use other monitored areas (e.g., post anesthesia areas)

NOTE: It is usually most effective to determine the potential strategies and then whether there is an associated trigger point and a corresponding indicator. Strategies implemented should be proportional to the demand.

Abbreviations: AIIR = Airborne Infection Isolation Room; ECMO = extra-corporeal membrane oxygenation; ED = emergency department; HEPA = High Efficiency Particulate Air; ICU = intensive care unit; PPE = personal protective equipment.

SOURCE: Developed by authors

Staffing

Staff shortages may be the primary challenge to implementing surge capacity plans during an epidemic. Staff may be furloughed due to unprotected exposures or illness. COVID-19 has sickened many health care workers, although it is unclear how many of these were personal protective equipment (PPE) device failures versus failure to use PPE for patients with mild or atypical symptoms [20].

Key issues to address are:

- **Child care provision** – noting that in-home day care or small group care may have to be arranged as congregate child care at the hospital may not be well accepted with a virus that may be transmitted during prodromal/asymptomatic periods. School closures are proposed as a social distancing mechanism but may impact the ability of staff to work. Pet care may also be needed.
- **Staff safety** – comfort with the PPE provided and the care techniques practiced [16].
- **Housing** – providers at risk of nosocomial acquisition of infection may request alternate housing to avoid exposing family members – on and off campus options may be needed.
- **Information** – staff must be informed about contingency and crisis practices being implemented and the reasons for these decisions.
- **Shift type/length** – shifts should be balanced to avoid fatigue and burnout over the weeks or months of an epidemic yet ensure appropriate staffing.
- **Support, information, and training** - Medical assistants, environmental services, transporters, and others may have equal or greater need compared to physicians, advanced practice providers, and nursing staff.

Staff duties should be carefully considered and adjusted to meet demand—clinical staff in administrative positions should return to clinical care as much as possible. Staff should practice "at the top of their license" (i.e., respiratory therapy should focus on managing ventilators and eliminate most other responsibilities). Nursing staff should concentrate on IV medication administration and assessment, deferring basic personal care, feeding, etc., to health care assistants, vetted volunteers, family members, and other personnel. Flexible staffing and patient assignment models may be needed to allocate key personnel to the most pressing patient needs. For example, nurse/patient ratios may need to be expanded, or a shift from primary nursing to team nursing may be necessary. Just-in-time training may be required to ensure competency with novel or rarely used skills. In the authors' view, the goal should be to minimize the need to train staff in new high consequence skills (e.g., training on ventilator management should be discouraged in favor of spreading those with ventilator management skills across a larger number of patients and leaving less critical tasks/decisions to other providers).

Personal Protective Equipment

Viral pandemics usually require airborne precautions (as is currently recommended, in addition to contact and standard precautions for SARS-CoV-2) and always challenge respirator (particularly N95 disposable mask) production and distribution. Simple masks may also be in shortage due to demand from health care, government, and the general public making concurrent purchases. Disruption of the supply chain may severely exacerbate shortages particularly because, for SARS-CoV-2, China is both the epidemic epicenter and a key source of the PPE.

Protection of hospital staff for a few cases of COVID-19 involves full changes of the PPE for each patient encounter. One of the hospitals caring for an initial U.S. case of COVID-19 reported this led to up to 20 changes per shift [21]. As cohorting becomes necessary and the volume of cases increases, a shift to continual use in designated units or even throughout the facility may be required. As the COVID-19 epidemic continues, additional information about PPE use, disinfection, and adaptations will be forthcoming. New information from CDC and other sources must be monitored and incorporated into practice.

Additional conservation and re-use techniques should be considered when the PPE is in shortage, including:

- Reserving the most protective eyewear/gowns/respiratory protection for those performing high-risk interventions (e.g., intubations, monitoring persons on BiPAP)
- Use of powered air-purifying respirators (PAPRs) in high-risk environments, thus conserving masks
- Re-usable materials, including eyewear and laundered gowns
- Re-using N95 masks – this was recommended during the 2009 pandemic and is the subject of NIOSH current guidance as well as evolving

CDC guidance[1]. This guidance involves wearing a simple mask or shield over the N95 to prevent contamination, and the use of a box/bag designated for the provider to set his/her mask in using removal and re-application techniques that minimize the risk of cross-contamination [15]
- Use of elastomeric half-face respirators in high-risk environments following appropriate disinfection procedures [16]
- Use of industrial N95 respirators for health care
- Continuous, rather than intermittent, use of the PPE in a cohorted patient environment (allowing less changing/removal)
- Use of clean linens or handkerchiefs in place of simple masks for symptomatic patients
- Discouraging the public from wearing masks designed for health care use to increase supplies available to health care personnel
- Restriction of use of barrier gowns to patients with gastrointestinal symptoms if shortages are severe (consider hospital laundered scrubs in this case and the restriction of personnel to selected areas of the facility)
- Reduction in onsite staff and restriction of the PPE to clinical staff

Emergency Medical Services

Because EMS is a key part of the health care delivery system a brief section is included here. Adaptations during periods of high call volumes have been described in several publications [2,14,22] and will be briefly summarized. Key issues for EMS response and transport include:

- Auto-answer during high demand with rollover to other 911 answering points, or diversion of non-emergency calls to 311 and other sources of information
- Call screening for potential infection
- Call triage process during times of high demand (referral to private transport, alternate response, referral to other services based on priority dispatching and/or medical provider interview)
- Alternate crew configuration/response configuration (may require regulatory relief)
- Alternate shift structures
- Batch transports (i.e., answering more than one call prior to transport to the hospital)
- Closest appropriate hospital transport
- Expanded discretion for providers to leave the patient at the scene after assessment
- "Jump car," community paramedic, other alternate responses

The minimum number of caregivers should participate in patient assessment and care. PPE should be worn according to CDC guidance [23,24] with possible adaptations as above during shortages. Nebulized medications and aerosol-generating interventions should be avoided. Metered dose inhalers may be an option. Some nebulizer sets minimize droplet generation into the patient compartment but many do not filter the exhalation and therefore still pose a risk. Providers should understand exactly how to adjust the ventilation in their ambulance to ensure maximal exhaust and a directed fresh air intake to enhance air exchange and encourage negative pressure. Additional EMS infectious disease guidance is available in a "playbook" format [25] and may be helpful in CSC planning.

Outpatient Services

Augmenting outpatient care may significantly reduce ED volumes. However, every effort to defer routine outpatient visits should be made to avoid transmission. Electronic (app-based, phone-based, telemedicine, telehealth) options should be emphasized to decrease in-person visits [26,27]. Good communication to patients from the health care system and media (social and traditional) should emphasize when testing is needed (early in the epidemic, testing may be necessary and should be conducted in facilities that have appropriate isolation rooms—as cases accumulate, testing should be discouraged). The lack of specific treatment for COVID-19 should be emphasized—patients should stay home and use usual over-the-counter fever control and decongestion medications unless or until their symptoms are severe enough to require hospitalization. Information on "red flag" symptoms or signs should be developed to facilitate patient decision making and the use of call lines to help with decision making should be implemented. Automated voice response call lines are a promising option for helping patients determine whether going to the clinic or hospital is warranted.

Clinics may consider the following as examples of adaptations to meet increased demand:

- Extended hours
- Adjusted staffing
- Closing/reducing specialty clinic hours and repurposing providers and space for acute care
- Changes to documentation, including templated electronic health record charts or paper charts for COVID-19 visits

1 See https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirator-supply-strategies.html.

As case counts increase in a community, it may be helpful to designate a clinic for suspect cases. Even if this is done, clinics must have a triage process to rapidly identify, isolate, or cohort those with suspected COVID-19. At a certain point, all patients may need to be assumed to be ill and kept masked and separated at least 6 feet from other patients. Having patients wait in their car (if they have one) to be called in may be preferred to decompress the waiting room. Rapid screening and discharge should be implemented for minor cases to prevent clinic congestion.

Alternate Systems of Care

In some cases, community triage/health lines may need to be coupled with other telemedicine/telehealth modalities to augment capacity and meet demand. The public should be strongly encouraged to use telephonic and other telehealth resources first, particularly as prevalence in the community increases, because symptomatic management is the current main treatment for COVID-19, and sequestration at home reduces one's chances of passing the illness to others in the community.

One strategy is the adoption of digital health response plans to support the care of patients in the community. Application-based artificial intelligence "symptom checker" tools and telemedicine consultations could be used to determine if someone requires testing and further clinical- or hospital-based evaluation and care. The use of telemedicine strategies for patient evaluation and management within the hospital may limit staff exposures to potentially infectious patients [21].

If hospitals become overloaded, alternate care sites at the hospital or within the community (e.g., at a high school or a convention center) can provide cot-based care, and in some cases oxygen therapy to a significant number of overflow non-ambulatory patients requiring basic or convalescent care. This allows hospital beds to be used for higher acuity care and for those whose illness severity has not yet peaked. These sites require a multidisciplinary commitment from coalition stakeholders and advanced planning and logistical support [28]. Staffing of these sites may be through a combination of providers including Medical Reserve Corps, nongovernmental organizations, specialty providers not needed in their clinics, ambulatory surgical center providers, and a range of other volunteers.

Inpatient Services and Clinical Care

Hospital Incident Command

The use of incident command principles (operational periods, incident action planning, etc.) is required for successful CSC planning and response. One of the key approaches is the integration of nursing and physician staff into planning activities so that the adopted strategies reflect good clinical practice. The objective is to plan for maximal inpatient and outpatient surge in the face of potential staff and supply shortages. This involves a staged planning for the "graceful degradation of services"—incremental changes to the quality of care the facility is able to provide that are carefully thought through and staged to minimize impact—providing the maximal services possible while minimizing risk to providers and patients. These stages should cover conventional, contingency, and crisis phases of care and should be looked at as a continuum rather than three separate phases of care (i.e., there is not a bright line between the end of contingency and beginning of crisis strategies, and some strategies in crisis may not have as dire consequences as others). An example of this would be a staffing plan that has multiple phases of adaptation depending on the availability of staff compared to demand.

Pandemics, in particular, present a dynamic challenge to health care to calibrate the strategies in proportion to demand. The incident command team must understand that not all elements of care usually require crisis strategies at the same time. For example, certain medications may be in critical shortage, but staff and space are adequate; or staffing requires significant adaptations but the space and medications available are adequate. Providers should be encouraged to identify the specific issue and the relevant coping strategies to balance supply and demand and adjust as required.

If the epidemic requires the triage of lifesaving resources (e.g., the re-allocation or discontinuation of services such as ECMO due to its extreme resource commitment), there should be a clear institutional process for making these decisions [2,12]. These decisions should be made only when it is clear there are no other regional resources or temporizing alternatives.

As described in the 2012 IOM report [2], triage should use the best clinical and operational data available, and a consultative decision should be made by at least two peer providers that ideally are not the caregivers for the patient(s) affected, allowing for a dispassionate degree of clinical decision making based on prognosis and other accepted factors [2]. The triage team might

include, for example, the hospital chief medical officer and a relevant staff physician in critical care or infectious diseases. Expectations of documentation of these decisions should be outlined prior to the triage event, and frequent review of available resources is required when critical care allocation decisions are being made to ensure the ethical tenets of CSC are upheld. There should also be an agreed-upon "appeals process" so that any additional or newly relevant information can be shared with decision makers (presuming such information can be delivered in an expedient, timely manner). These processes and decisions should be reviewed to ensure fidelity to ethical and procedural expectations at the facility.

Emergency Department Care

EDs often operate at or above capacity on a daily basis. In addition to the above strategies for outpatient care, in the case of a pandemic, EDs should consider:

- Diversion of non-critical possible COVID-19 cases at a triage point prior to ED entry ("parking lot triage")
- Use of current Airborne Infection Isolation Room (AIIR) isolation rooms, and a plan for how specific areas of the ED will be used as infectious care areas as the number of cases increases
- Use of specific space (e.g., urgent care, pediatric, same-day surgery waiting) for COVID-19 patients subject to appropriate isolation of that area from an air-handling and patient movement standpoint
- Use of discharge waiting areas (if not routinely used)
- Triggers for having staff wear PPE at all times, given the potential for transmission from atypical/asymptomatic cases once cases reach a certain level in the community
- Changes in patient flow and charting that can expedite non-emergency visits
- Coordination with patient placement/command center so that admission criteria and discharge criteria can be flexible depending on the patient loads
- Coordination with EMS, including through telephone triage, to avoid ED visits that can safely be cared for as outpatients

Inpatient Care

Hospitals should have a staged plan to accommodate initial cases in AIIR isolation rooms, then progress to cohorting in isolation rooms, then cohorting on specific units (which may require the adjustment of ventilation to create negative airflow and the creation of temporary partitions in hallways/entryways). As cases accumulate, units and floors may be converted to cohort units, and if the number of cases increases, a designated unit may be needed for non-infectious hospitalized patients (understanding that some of these patients may still be infected). Caring for and protecting obstetric and pediatric patients are important. Thus far, older patients and those with comorbid disease are much more affected than pediatric patients; therefore, it might become necessary to care for select adult patients on pediatric wards or in children's hospitals.

As demand for inpatient resources grows, the focus should be on accommodating a surge in critical care patients [29,30]. Spaces such as pre- and post-anesthesia care; same-day surgery; and other monitored procedural areas such as gastroenterology labs, intermediate care, and monitored/step-down units should be assessed for critical care expansion.

Some rooms in the hospital may accommodate more than one patient. The patient care unit criteria for admission will need to vary with demand, and the threshold for admitting patients will need to shift accordingly (e.g., may have to accommodate BiPAP on monitored floor bed or refer possible angina with negative ECG and troponin to outpatient workup). Cancelling elective procedures that require hospital admission can help initially, but if the epidemic is prolonged this strategy may have to be re-evaluated.

Visitor restrictions are needed as community cases increase unless the family member is needed to provide personal care or feeding assistance. All visitors should be instructed to comply with the PPE and other infection control policies (though this may need to be re-evaluated if the visitor has been infected and recovered, assuming that infection confers at least temporary immunity). Electronic visiting can be used to replace in-person visits.

Critical Care for the COVID-19 Patient

Little is known about the optimal treatment of the COVID-19 patient at this time. Knowledge of other coronaviruses such as SARS and MERS suggests that supportive care is the mainstay of therapy [31]. Providers should be prepared for potential shortages of materials and medications due to supply chain disruption in other countries, including China, though the scope and impact are unpredictable. Remdesivir, an investigational antiviral that has activity against MERS-CoV in animal models and was used in human trials for Ebola, is being evaluated in a clinical trial [32]. Other HIV protease in-

hibitors could have efficacy based on potential binding to coronavirus protease, but actual benefit or harm in treating COVID-19 is unknown. Steroids have not been shown to be helpful in treating other coronaviruses and may prolong viral shedding [33,34,35].

Initial reports describe progression of lung injury in the second week of illness and severe cases may require prolonged treatment, including mechanical ventilation. Providers should be careful not to conflate failure to improve within days with a poor prognosis, as improvement can be very slow. Use of BiPAP or Continuous Positive Airway Pressure (CPAP) may forestall the need for intubation and has been broadly used in early case series and anecdotal reports [36]. Additional CPAP machines might be available from home users for use in hospital settings, and adjusted criteria for intubation and weaning may reduce days on a ventilator. ECMO may provide effective treatment for refractory cases [36], but ECMO requires extensive resources and the number of patients that can be placed on ECMO is small. If hospitals are overwhelmed, there should be a regional decision-making process to determine if the resources allocated to ECMO could be better used for a larger group of patients [12]. Providers should be prepared to re-use items such as endotracheal tubes, nasogastric tubes, oxygen delivery masks and tubing, and even ventilator circuits with appropriate high-level disinfection and sterilization as appropriate. Additional protocols may include:

- Patients should wear simple flexible fabric masks to reduce droplet generation unless wearing an oxygen mask
- Oxygen and oxygen administration supplies may need to be conserved—accepting lower oxygen saturations prior to initiating oxygen may be required
- Intermittent rather than continuous oximetry and cardiac monitoring may be instituted
- Use inhalers in lieu of nebulized medications to reduce droplet generation
- Coordinate with critical care physicians regarding threshold for intubation and use of bridging techniques (e.g., high flow cannula/BiPAP), which may require a special area and augmented PPE (e.g., PAPR) for providers given the higher risk of aerosol generation
- Use rapid sequence intubation (RSI) techniques during intubation to minimize aerosol generation
- Aggressively control and suppress patient cough, as possible
- Reduce suctioning as possible
- Use of High Efficiency Particulate Air (HEPA) filters on ventilators or at minimum in-line HME/HEPA filters on the endotracheal tube
- Consider more aggressive sedation/paralysis strategies to reduce coughing, as applicable
- Monitor the literature to determine potential efficacy of anti-virals (there is currently no known effective medications and limited evidence for bacterial super-infection) and other therapies
- Monitor the literature for prognostic information that may inform resource triage decisions if necessary. Expect a prolonged course of mechanical ventilation [35]; therefore, "trial periods" of a few days are not recommended as improvement may not occur for days or even weeks. Sequential Organ Failure Assessment scores have limited prognostic value in viral-induced lung injury compared to sepsis so they should be used as contributory data and not to exclude a patient from resources [10,11,37,38].

Conclusion

Hospitals apply the principles of CSC on a regular basis to address the boarding of admissions in the ED, medication shortages, and staffing issues. However, major disasters and pandemics require much more difficult, sustained, and systematic decisions. It is important that hospitals take steps now to develop a process for decision making, anticipate what resources may be in shortage, and involve clinical staff in developing strategies to address a broad range of impact. The failure to plan for a worst-case scenario involving the SARS-CoV-2 virus and resulting disease state would be a missed opportunity to take the steps necessary to improving the systems upon which health care service delivery during disasters are dependent. Proactive planning that is based on regional coordination, interdisciplinary cooperation, and specific strategies for the management of resource and personnel shortages are all critical to ensuring a successful response. Less than optimal outcomes can be avoided, which both patients and the health care providers charged with their care deserve. We can hope that the COVID-19 epidemic is limited, but even if it is, these planning efforts will not have been wasted as they will leave staff, organizations, and systems better prepared to address the next threat of the 21st century.

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From: Baertlein, Cheryl R.[baertlein.cheryl@mayo.edu]
Sent: Wed 3/18/2020 11:48:30 AM (UTC-04:00)
Subject: FW: No reinfection and titer data in COVID Plasma
2020.03.13.990226v1.full.pdf
2020.03.02.20030189v1.full.pdf

****
Sent on behalf of Michael J. Joyner, MD
****
Please review attached PDFs

From: Joyner, Michael J., M.D.
Sent: Wednesday, March 18, 2020 9:02 AM
To: Maryann Smith (maryann.smith@jhu.edu); Baertlein, Cheryl R.
Subject: No reinfection and titer data in COVID Plasma

Pls e-mail to group

All, my post-docs are watching the emerging lit. 2 good pieces of news.

From: Senefeld, Jonathon W. (Jack), Ph.D.
Sent: Wednesday, March 18, 2020 8:25 AM
To: Joyner, Michael J., M.D.
Cc: Wiggins, Chad C., Ph.D.; Shepherd, John-Roger A. (John), M.D.
Subject: COVID Plasma

Hi Mike,

FYI—I saw a new study this morning from monkeys providing substantial credence to your idea about harvested plasma from COVID-19 patients…Please see the attached PDF.

Also, another study of antibody responses to COVID-19 in humans…as suggested in the IRB, 2 weeks may be a sweet spot for harvesting anti-bodies. This PDF is also attached.

Kind regards,

Jack

Jack Senefeld, Ph.D. | Research Fellow | Anesthesiology |
Mayo Clinic | 200 First Street SW | Rochester, MN 55905 | mayoclinic.org

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Reinfection could not occur in SARS-CoV-2 infected rhesus macaques

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Abstract

An outbreak of the Corona Virus Disease 2019 (COVID-19), caused by the severe acute respiratory syndrome CoV-2 (SARS-CoV-2), began in Wuhan and spread globally. Recently, it has been reported that discharged patients in China and elsewhere were testing positive after recovering. However, it remains unclear whether the convalescing patients have a risk of "relapse" or "reinfection". The longitudinal tracking of re-exposure after the disappeared symptoms of the SARS-CoV-2-infected monkeys was performed in this study. We found that weight loss in some monkeys, viral replication mainly in nose, pharynx, lung and gut, as well as moderate interstitial pneumonia at 7 days post-infection (dpi) were clearly observed in rhesus monkeys after the primary infection. After the symptoms were alleviated and the specific antibody tested positively, the half of infected monkeys were rechallenged with the same dose of SARS-CoV-2 strain. Notably, neither viral loads in nasopharyngeal and anal swabs along timeline nor viral replication in all primary tissue compartments at 5 days post-reinfection (dpr) was found in re-exposed monkeys. Combined with the follow-up virologic, radiological and pathological findings, the monkeys with re-exposure showed no recurrence of COVID-19, similarly to the infected monkey without rechallenge. Taken together, our results indicated that the primary SARS-CoV-2 infection could protect from subsequent exposures, which have the reference of prognosis of the disease and vital implications for vaccine design.

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The Corona Virus Disease 2019 (COVID-19) caused by severe acute respiratory syndrome CoV-2 (SARS-CoV-2), emerged in Wuhan China, has continued to sweep through South Korea, Japan, Italy and Iran. More than 90,000 people have been infected worldwide, with nearly 3000 deaths in about 40 countries[1,2]. Since February, it was estimated that about 14% of discharged patients in Guangdong province and elsewhere were testing positive after their release from the hospital and had to return to the hospital for observation[3,4]. Doubts about whether patients have a risk of "relapse" or "reinfection" after recovery from initial infection have aroused the worldwide concern. Therefore, in this study, we used the nonhuman primate models with SARS-CoV-2 infection followed by the same virus rechallenge to ascertain the possibility of reinfection.

Four adult Chinese rhesus macaques (No M1-M4, 3-5 kg, 3-5-year-old) were intratracheally challenged with SARS-CoV-2 at 1×10^6 50% tissue-culture infectious doses ($TCID_{50}$), and the body weight, body temperature, X-ray, sampling of sera, nasal/throat/anal swabs and all primary tissues were carried out on schedule (Figure 1). Following the initial infection, three of the four monkeys showed the weight loss ranging from 200 g to 400 g (Figure 2a), but the changes of rectal temperature in all the animals were not observed (Figure 2b). Other clinical signs such as reduced appetite, increased respiration rate and hunched posture were transient after the initial challenge. We next determined their viral loads in respiratory and anal swabs along the timeline after the infection. As shown in Figure 2c and 2d, the viral loads in nasal swabs and pharyngeal swabs reached the highest levels (average, approximately 6.5 $\log_{10}$ RNA copies/mL) at 3 days post-infection (dpi) and then declined naturally. Similarly, viral loads from anal swabs reached the peak about 4.5 $\log_{10}$ RNA copies/mL at 3 dpi and then declined to undetectable level at 14 dpi (Figure 2e). To identify the virus

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distribution and histopathological changes in SARS-CoV-2 infected monkeys, M1 monkey was euthanized and necropsied at 7 dpi. As shown in Figure 2f (left panel), viral replication was found in nose (10^7 to 10^8 copies/mL), pharynx (10^5 to 10^6 copies/mL), lung (10^4 to 10^7 copies/mL), gut (10^4 to 10^6 copies/mL), spinal cord (approximately 10^4 copies/mL), heart (approximately 10^4 copies/mL), skeletal muscle (approximately 10^4 copies/mL) and bladder (approximately 10^4 copies/mL). Furthermore, the lesions occurred mainly in the lung confirmed by the HE staining and anti-spike protein of SARS-CoV-2 staining, with mild to moderate interstitial pneumonia characterized by thickened alveolar septa, accumulation of alveolar macrophages in the alveoli, degeneration of the alveolar epithelia, and infiltration of inflammatory cells (Figure 3a). In addition, the chest X-ray at 7 dpi showed that the upper lobe of the right lung had varying degrees of the localized infiltration and interstitial markings, showing the mild to bilateral ground-glass opacification (Represented by M4, Figure 3b). For the longitudinal tracking of the characteristics each monkey, the specific antibody against SARS-CoV-2 of M2, M3 and M4 monkey was significantly elevated at 14 dpi or 21 dpi and 28 dpi compared to that at 3 dpi and 7dpi ($^*P<0.05$, $^{**}P<0.01$, Figure 2g). In the three infected monkeys alive, body weight and rectal temperature remained relatively stable before rechallenge (Figure 2a and 2b), viral loads of nasopharyngeal and anal swabs were not detectable along the timeline before 28 dpi (Figure 2c to 2e), and no common abnormalities were found on a chest X-ray test at 28 dpi prior to the rechallenge (Represented by M4, Figure 3b). Altogether, these data suggested that the three animals were considered as recovering from SARS-CoV-2 infection, similarly meeting the clinical discharge evaluation criteria (absence of clinical symptoms and radiological abnormalities and 2 negative RT-PCR test results[5]).

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Subsequently, two infected monkeys (M3 and M4) were intratracheally re-challenged at 28 dpi with the same dose (1×10^6 $TCID_{50}$) of SARS-CoV-2 to ascertain the possibility of reinfection, whereas M2 monkey without any re-treatment was continuously monitored as the control (Figure 1). None of the monkeys showed the weight loss after the re-exposure (Figure 2a), but the transient elevation of body temperature was observed in both re-exposed monkeys (Figure 2b). Viral loads in nasopharyngeal and anal swabs tested negative after the re-exposure of SARS-CoV-2 along the timeline (Figure 2c to 2e). Correspondingly, M3 monkey was euthanized and necropsied at 5 days post-reinfection (dpr) to confirm the viral replication and histopathological changes caused by re-exposure. Compared to M1 monkey at 7 dpi, no viral replication in all tissues (Figure 2f, right panel), as well as no pathological damage and viral antigen in lung tissues (Figure 3a, lower panel), were found in M3 monkey at 5 dpr. As shown in Figure 3b, chest X-ray showed that there was no abnormal in M4 monkey at 5 dpr, similarly prior to the re-exposure (28 dpi). Therefore, our results suggested that the monkeys with SARS-CoV-2 infection after recovery could not be re-infected with the same strain. Longitudinally, the monkey undergone single infection in this study did not appear the recurrence after the recovery either.

It has been reported that the high levels of neutralizing antibodies have a protective effect on SARS-CoV infection, but the low neutralizing antibody are more susceptible to enhance the SARS-CoV infection and trigger antibody-dependent enhancement (ADE) effect[6]. As shown in Table 1, the titers of 1:16 (M2, M4) and 1:8 (M3) exhibited the neutralizing effect at 21 dpi and 28 dpi. After the re-exposure, the titers for M4 elevated 1:40 at 5 dpr and 14 dpr, while M3 maintained the same titer as 1:8 at 5 dpr. In this study, ADE were not found in infected monkeys that were subsequently exposed to SARS-CoV-2. Because the neutralization antibody from our animal test is

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comparable to that from recovered patients, this finding will have important implications to evaluate vaccine development.

From our current longitudinal study of monkeys, the reinfection could not occur if the monkeys produced the neutralizing antibody at an early stage after the primary infection. Correspondingly, the convalescing patients won't be contagious when they build up the enough specific antibody to develop immunity to SARS-CoV-2. On the other hand, no viral replication in all primary tissues was detectable in re-exposed monkeys, implying that the coronavirus might not be hidden for a long time. For the phenomenon on the discharged patients tested positively, it may be attributed to the "false negative" RT-PCR test results before their discharge or the patients without fully recovery albeit they met the discharge criteria. Therefore, further refinement of the diagnostic techniques, antibody monitoring and samples testing from the lower respiratory tract is essential for the cure of SARS-CoV-2 infection. In this study, our results indicated that the primary SARS-CoV-2 infection could protect from subsequent exposures, which have the reference of prognosis of the disease and vital implications for vaccine design. Importantly, the unsuccessful rechallenge in NHP models suggested that the re-positivity from discharged patients could not be due to reinfection. It needs to consider more complicated issues to find out the causes.

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Table 1 Neutralizing antibody titers to protect of SARS-CoV-2-infected Monkeys from reinfection.

Animal ID	Primary challenge		Rechallenge	
	21 dpi	28 dpi	5 dpr	14 dpr
M1[a]	NE	NE	NE	NE
M2[b]	1:16	1:16	NE	NE
M3[c]	1:8	1:8	1:8	NE
M4	1:16	1:16	1:40	1:40

Notes: a M1 was euthanized and necropsied at 7 dpi. NE, not examined.

b M2 was continuously monitored without rechallenge. NE, not examined.

c M3 was euthanized and necropsied at 5 dpr. NE, not examined.

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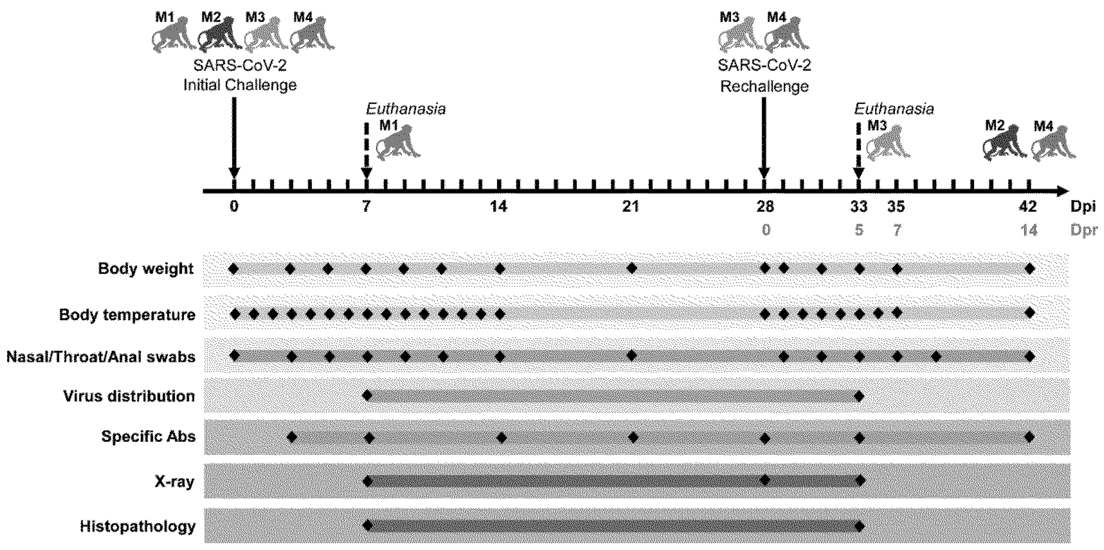

Figure 1 Experimental design and sample collection. Four monkeys were initially challenged with 1×10^6 $TCID_{50}$ SARS-CoV-2 with the intratracheal route. To investigate the influence of reinfection, M3 and M4 after recovery were intratracheally rechallenged with the same dose of SARS-CoV-2 at 28 days post-infection (dpi). Two animals (M1 and M3) were sacrificed at 7 dpi and 5 days post-rechallenge (dpr), respectively. M2 with single infection and M4 with primary infection followed by secondary challenge were longitudinally monitored during the entire observation. Body weight, body temperature and nasal/throat/anal swabs were measured along the timeline at a short interval. Two measurements of virus distribution and histopathology (HE/IHC stain) were carried out at 7d dpi (M1) and 5 dpr (M3). The specific antibodies against SARS-CoV-2 were detected seven times and X-ray was examined three times.

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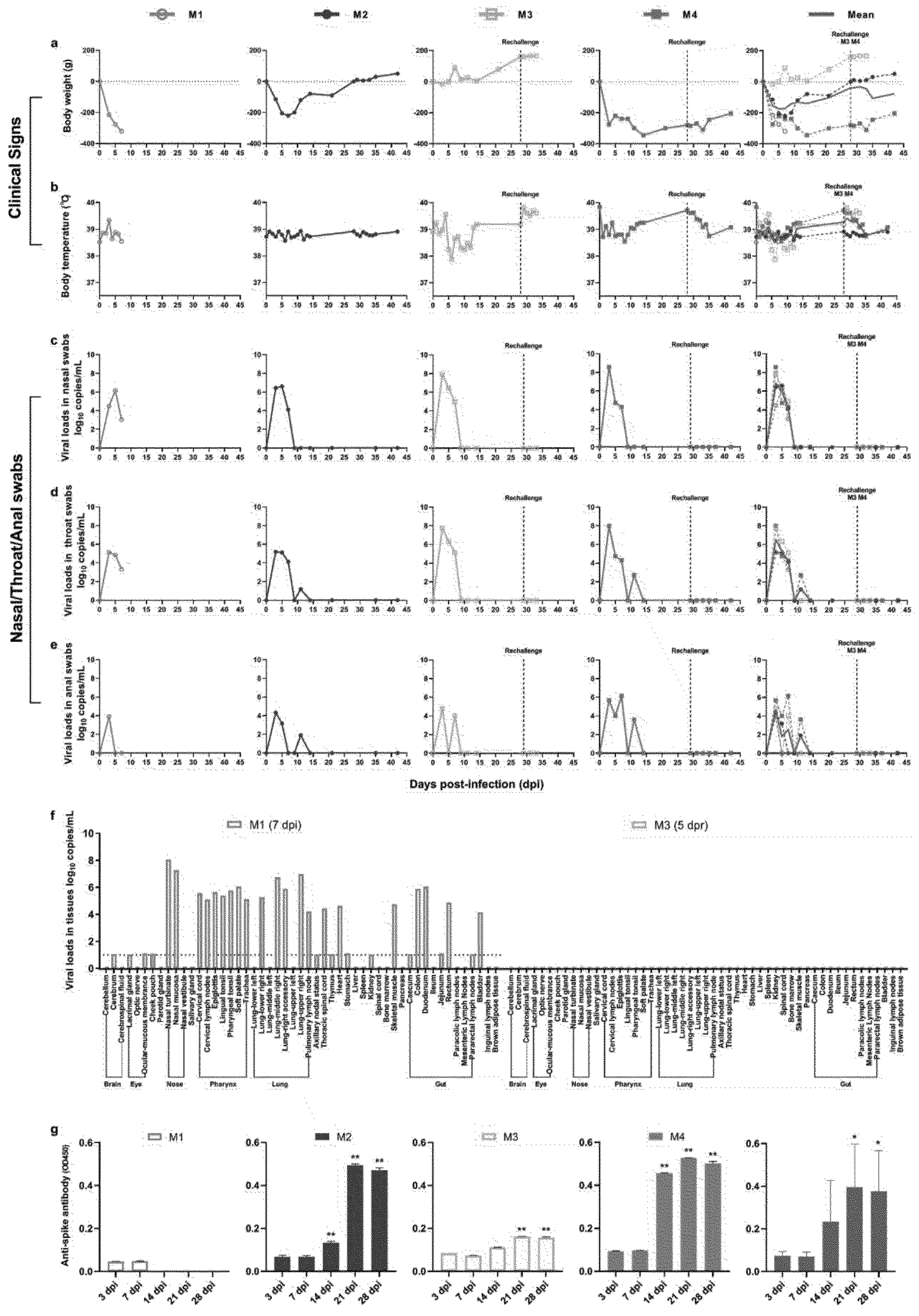

Figure 2 Longitudinally tracking in clinical signs, viral replication and immune response. (**a** and **b**) Clinical signs in each monkey. Monkeys were recorded daily for the changes in body weight and rectal temperature along the timeline after the initial

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infection followed by the virus rechallenge. Weights were expressed as percentage of body weight prior to primary infection. (**c**, **d** and **e**) Detection of viral RNA in nasal swabs, throat swabs and anal swabs. SARS-CoV-2 RNA was detected by qRT-PCR in the swabs from four monkeys at the indicated time points. Two monkeys were rechallenged at 28 dpi (the dotted line). (**f**) Detection of viral RNA in the mainly organs, such as brain, eye, nose, pharynx, lung and gut. Compared to M1 with primary infection at 7 dpi, viral replication tested negatively in the indicated tissues from M3 (at 5 dpr) with the virus rechallenge. (**g**) Levels of specific IgG against spike protein in each monkey. The levels of anti-viral antigen specific IgG from each monkey were detected at 3, 7, 14, 21, 28 dpi. The level of specific IgG at 14 dpi, 21 dpi or 28 dpi was significantly higher than that at 3 dpi or 7 dpi. The grey lines or bars represented the average of all animals at the indicated time points. (One-way ANOVA, *$P<0.05$, **$P<0.01$)

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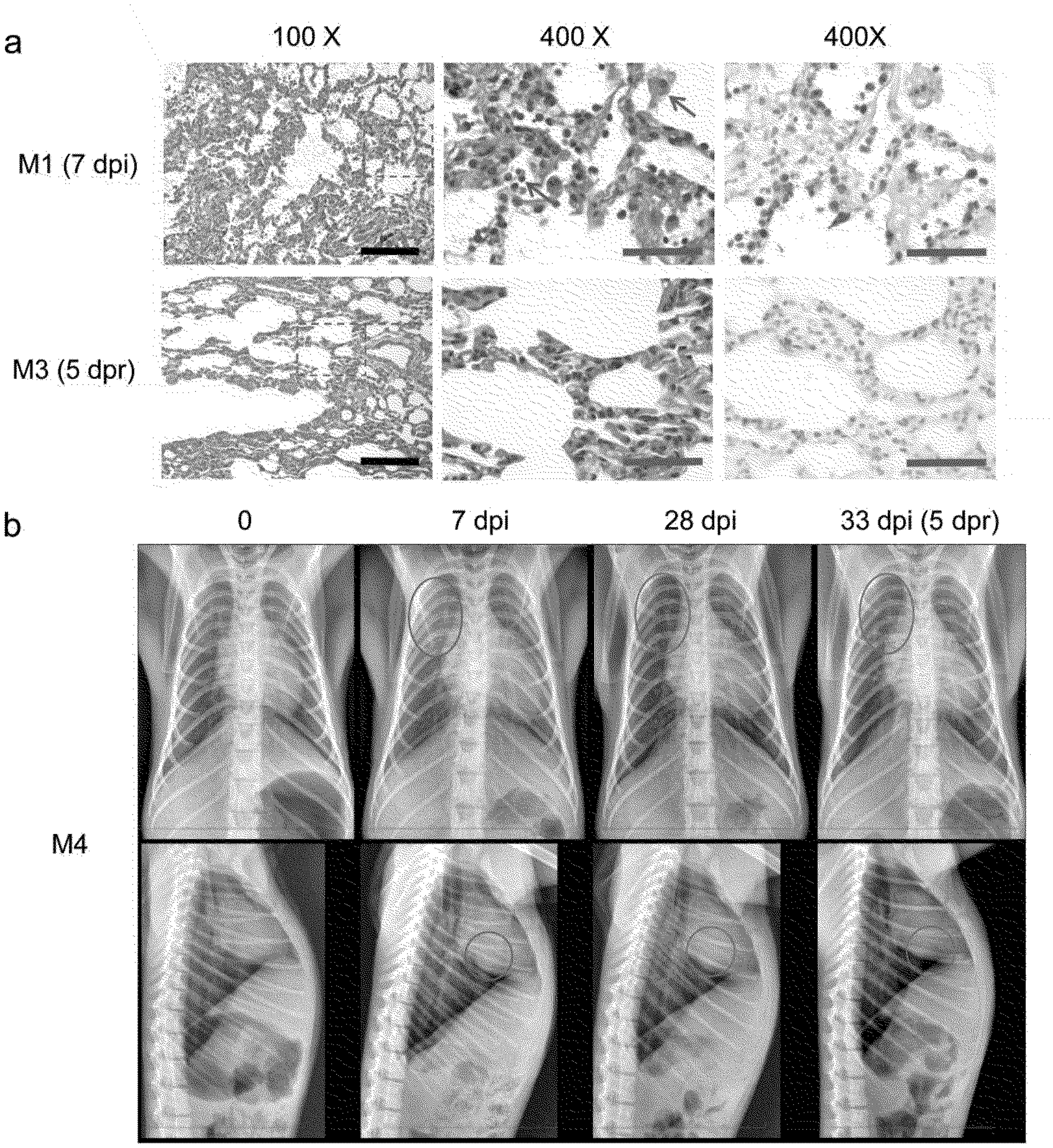

Figure 3 Longitudinally tracking in histopathology and chest X-ray. (**a**) Histopathology and immunohistochemical examination of lung in M1 monkey (7 dpi) and M3 monkey (5 dpr). Histopathological examination exhibited that moderate interstitial pneumonia with infiltration of lymphocytes (green arrow) and swollen aveolar macrophages (red arrow) in the alveolar cavities at 7 dpi. The antigen of SARS-CoV-2 were detected with anti-Spike antibody using immunohistochemical examination. Black scale bar=100 μm, red scale bar=50 μm (**b**) Longitudinal examination of Chest X-ray in M4 monkey. M4 monkey were tested by chest X-ray

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prior to the challenge, as well as 7 dpi, 28 dpi and 5 dpr. Front chest X-ray (upper panel), Lateral chest X-ray (lower panel).

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Methods

Ethics statement

Four 3- to 5-year old rhesus macaques, named as M1 to M4, were housed and cared in an Association for the Assessment and Accreditation of Laboratory Animal Care (AAALAC)-accredited facility. All animal procedures and experiments were carried out in accordance with the protocols approved by the Institutional Animal Care and Use Committee (IACUC) of the Institute of Laboratory Animal Science, Chinese Academy of Medical Sciences (BLL20001). All animals were anesthetized with ketamine hydrochloride (10 mg/kg) prior to sample collection, and the experiments were performed in the animal biosafety level 3 (ABSL3) laboratory.

Animal experiments

For primary infection, all animals were inoculated intratracheally with SARS-CoV-2 (SARS-CoV-2/WH-09/human/2020/CHN isolated in our laboratory) stock virus at a dosage of 10^6 $TCID_{50}$/1 mL inoculum volume. After the recovery, M3 M4 were rechallenged intratracheally with the same dose (10^6 $TCID_{50}$/1 mL inoculum volume) SARS-CoV-2 at 28 dpi. To confirm the virus distribution and pathological changes, M1 at 7 dpi and M3 at 33 dpi (5 dpr) were euthanasia and autopsied respectively. All animals were monitored along the timeline to record body weights, body temperature, clinical signs, nasal/throat/anal swab, X-ray and specific antibody. The animal experiment and longitudinal sampling schedule are shown in Figure 1.

Quantification of SARS-CoV-2 RNA

The nasal/throat/anal swab samples and mainly tissue compartments collected from infected monkeys were tested for SARS-CoV-2 RNA by quantitative real-time reverse

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transcription-PCR (qRT-PCR). Total RNA was extracted and reverse transcription was performed as previously described[7]. qRT-PCR reactions were carried out on an ABI 9700 Real-time PCR system (Applied Biosystems Instrument), the cycling protocol and the primers as follows: 50°C for 2 min, 95°C for 2 min, followed by 40 cycles at 95°C for 15 s and 60°C for 30 s, and then 95°C for 15 s, 60°C for 1 min, 95°C for 45 s. Forward primer: 5'-TCGTTTCGGAAGAGACAGGT-3', Reverse primer: 5'-GCGCAGTAAGGATGGCTAGT-3'.

ELISA

Sera were collected from each animal for the measurement of SARS-CoV-2 antibody by enzyme-linked immunosorbent assay (ELISA) along the detection timeline after the initial infection. 96-well plates were coated with 0.1μg Spike protein of SARS-CoV-2 (Sino Biological, 40591-V08H) overnight at 4℃ and blocked with 2% BSA/PBST for 1 hour at room temperature. 1:100 diluted samples were added to each well and incubated for 30 minutes at 37℃, followed by the HRP-labeled goat anti-mouse antibody (Beijing ZSGB Biotechnology, ZB-2305) incubated for 30 minutes at room temperature. The reaction was developed by TMB substrate and determined at 450 nm.

Histopathology and Immunohistochemistry

Autopsies were performed according to the standard protocol in ABSL3 laboratory at 7 dpi for M1 and 5 dpr for M3. Lung samples were fixed in 10% neutral-buffered formalin solution. Then, paraffin sections (3-4 μm in thickness) were prepared and stained with Hematoxylin and Eosin (H&E) prior to the observation by light microscopy. For immunohistochemistry (IHC) staining to identify the antigen of SARS-CoV-2, paraffin dehydrated sections (3-4 μm in thickness) were treated with an

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antigen retrieval kit (Boster, AR0022) for 1 min at 37℃ and quenched for endogenous peroxidases in 3% H_2O_2 in methanol for 10 min. After blocking in 1% normal goat serum for 1 hour at roomtemperature, the slices were stained with 7D2 monoclonal antibody (laboratory preparation[7]) at 4℃ overnight, following with the incubation of HRP-labeled goat anti-mouse IgG (Beijing ZSGB Biotechnology, ZDR-5307) for 1 hour. Then, the slices were visualized by incubation with 3,30-diaminobenzidine tetrahydrochloride (DAB) and the image was viewed under an Olympus microscope.

Neutralizing antibody assay

Sera samples were tested for the presence of neutralizing antibody observed by cytopathic effect (CPE). Briefly, the sera from monkeys were heat-inactivated at 56℃ for 30 min. Then, serially two-fold diluted sera were incubated with 100 $TCID_{50}$ SARS-CoV-2 for 1 h at 37℃, and added into Vero-E6 cells in a 96-well-plate. Cells were cultured for 1 week to observe for CPE and the serum dilution in which 50% of the cells were protected from infection was calculated. Each dilution of serum was tested in triplicates.

Statistical analysis

Comparisons among the groups were determined using One-way ANOVA. All data were analyzed with GraphPad Prism 8.0 software. The level of statistical significance is designated as $*p < 0.05$, $**p < 0.01$.

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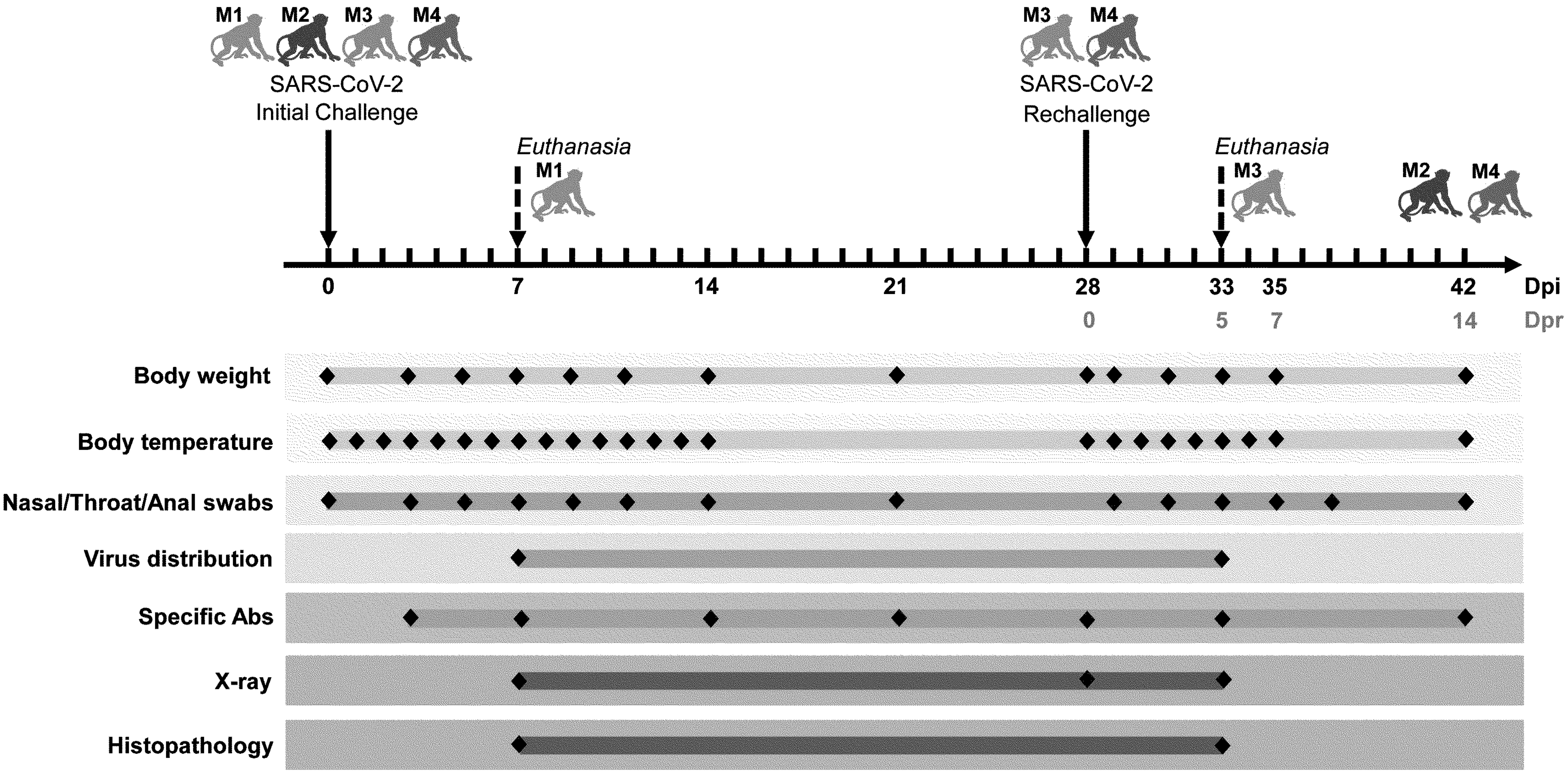
AUTHOR CONTRIBUTIONS

Conceptualization: C.Q.; Methodology: L.B., W.D., H.G., C.X., J.L., J.X. and Q.L.; Investigation: L.B., W.D., H.G., C.X., J.L., J.X., Q.L., J.L., P.Y., Y.X., F.Q., Y.Q., F.L., Z.X., H.Y., S.G., M.L., G.W., S.W., Z.S., W.Z., Y.H., L.Z., X.L. and Q.W.; Writing – Original Draft: J.X.; Writing –Review and Editing: C.Q.; Funding Acquisition: C.Q. and L.B.; Resources: C.Q.; Supervision: C.Q.

COMPETING INTERESTS

The authors have no competing interests to declare.



M1
M2
M3
M4
SARS-CoV-2
Initial Challenge
Euthanasia
M1
M3
M4
SARS-CoV-2
Rechallenge
Euthanasia
M3
M2
M4
0
7
14
21
28
33
35
42
Dpi
0
5
7
14
Dpr
Body weight
Body temperature
Nasal/Throat/Anal swabs
Virus distribution
Specific Abs
X-ray
Histopathology

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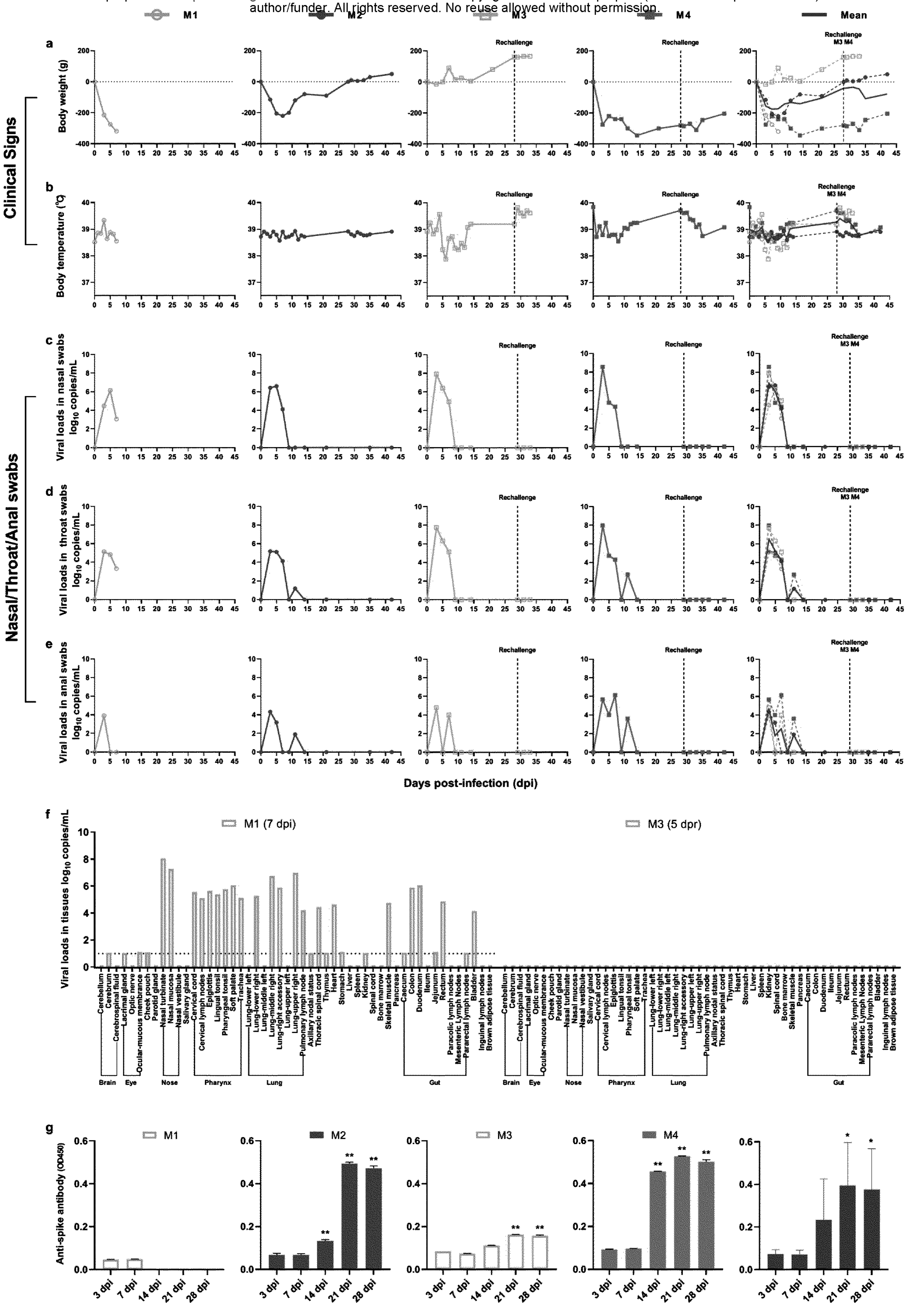

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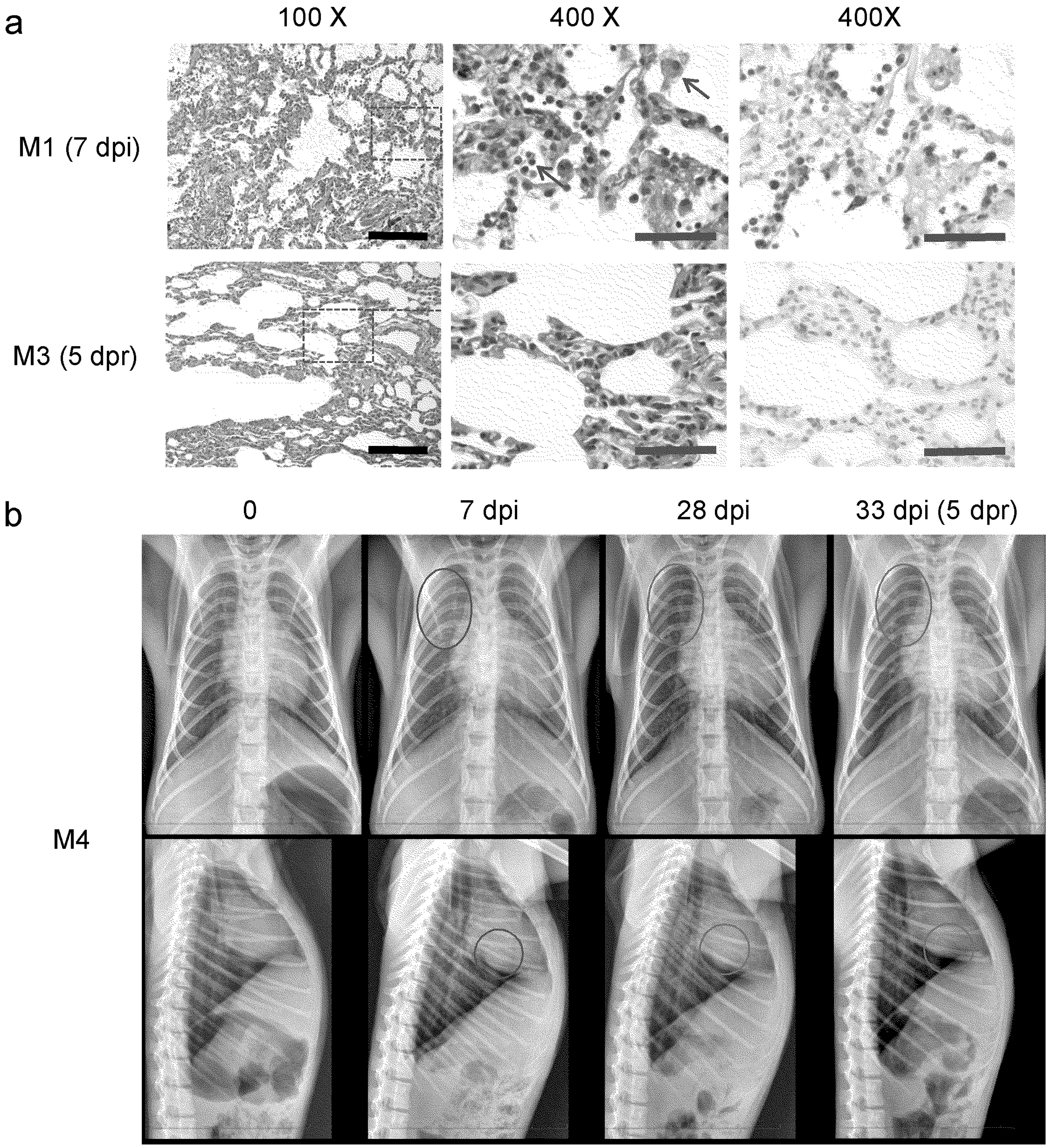

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Title: Antibody responses to SARS-CoV-2 in patients of novel coronavirus disease 2019

Brief Title: Antibody responses in COVID-19 patients

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Summary

Background

The novel coronavirus SARS-CoV-2 is a newly emerging virus. The antibody response in infected patient remains largely unknown, and the clinical values of antibody testing have not been fully demonstrated.

Methods

A total of 173 patients with confirmed SARS-CoV-2 infection were enrolled. Their serial plasma samples (n = 535) collected during the hospitalization period were tested for total antibodies (Ab), IgM and IgG against SARS-CoV-2 using immunoassays. The dynamics of antibodies with the progress and severity of disease was analyzed.

Results

Among 173 patients, the seroconversion rate for Ab, IgM and IgG was 93.1% (161/173), 82.7% (143/173) and 64.7% (112/173), respectively. Twelve patients who had not seroconverted were those only blood samples at the early stage of illness were collected. The seroconversion sequentially appeared for Ab, IgM and then IgG, with a median time of 11, 12 and 14 days, respectively. The presence of antibodies was < 40% among patients in the first 7 days of illness, and then rapidly increased to 100.0%, 94.3% and 79.8% for Ab, IgM and IgG respectively since day 15 after onset. In contrast, the positive rate of RNA decreased from 66.7% (58/87) in samples collected before day 7 to 45.5% (25/55) during days 15 to 39. Combining RNA and antibody detections significantly improved the sensitivity of pathogenic diagnosis for COVID-19 patients ($p < 0.001$), even in early phase of 1-week since onset ($p = 0.007$). Moreover, a higher titer of Ab was independently associated with a worse clinical classification ($p = 0.006$).

Conclusions

The antibody detection offers vital clinical information during the course of SARS-CoV-2 infection. The findings provide strong empirical support for the routine application of serological testing in the diagnosis and management of COVID-19 patients.

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Introduction

Since early December of 2019 and up to February 24, 2020, over 79, 000 cases of coronavirus disease 2019 (COVID-19) caused by novel coronavirus (SARS-CoV-2) infection, with over 2, 600 death cases infection have been reported in 26 countries with a majority of occurrences in China.[1] The World Health Organization declared a public health emergency of international concern on January 30, 2020. Public health authorities around the world react promptly to prevent further spread of the virus. According to recent reports, most of COVID-19 patients have an incubation period of 3 to 7 days.[2] Fever, cough and fatigue are the most common symptoms, whereas nasal congestion, runny and diarrhea are only noted in a small part of the patients.[3] Severe cases might rapidly progress to acute respiratory distress syndrome (ARDS), septic shock and difficult-to-tackle metabolic acidosis and bleeding and coagulation dysfunction.[4] It should be noted that some of COVID-19 patients only had mild atypical symptoms initially, even for severe and critical cases.[5] The chest computed tomography features of COVID-19 patients were characterized by the ground-glass opacity and bilateral patchy shadowing.[6] For laboratory test, it was reported that over 80% of patients had lymphopenia, and most of patients had elevated C-reactive protein.[7] However, the above-mentioned clinical and laboratory characteristics are not easily distinguishable from pneumonia induced by infection with other common respiratory tract pathogens such as influenza virus, streptococcus pneumoniae and mycoplasma pneumoniae.

The timely and accurate diagnosis of the SARS-CoV-2 infection is the cornerstone of

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the efforts to provide appropriated treatment for patients, to limit further spread of the virus and ultimately to eliminate the virus from human society. Currently, viral RNA detection by several polymerase chain reaction (PCR) based technics is almost the only way to confirm the diagnosis of SARS-CoV-2 infection in practice. On the other hand, RNA testing based on throat or nasopharyngeal swabs brought out negligible false-negative risk.[8] The reported positive rate varied for different swab specimens in COVID-19 patients. [3,9] Many cases that were strongly epidemiologically linked to SARS-CoV-2 exposure and with typical lung radiological findings remained RNA negative in their upper respiratory tract samples. There are four potential reasons: 1) the viral loads in upper respiratory tract samples are much lower than that in lower respiratory tract samples in COVID-19 patients;[9] 2) the releasing viral loads of patients in different stage of infection varies with a wide range;[10] 3) the collection of high-quality swab specimen requires skillful health-workers; and 4) PCR reagents from different sources have high variance. Consequently, these problems lead to a noteworthy delay of early diagnosis and following management and propose serious challenge to providing timely life support treatment and preventive quarantine.

For many known pathogenic viruses, it has been a routine practice to make a diagnosis of acute infection according to the serological findings for a long time. Comparing to PCR, serological testing is advantageous with faster turn-around time, high-throughput and less workload. However, the clinical value of antibodies largely depends on the understanding of host antibody responses during infection. Given that SARS-CoV-2 is a newly emerging virus, the antibody response in COVID-19 patients

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remains largely unknown. To mitigate this knowledge gap, and to provide scientific analysis on the benefit of antibody testing when used in combination with the current RNA testing, this study investigates the dynamics of total antibody (Ab), IgM and IgG antibody against SARS-CoV-2 in serial blood samples collected from 173 confirmed COVID-19 patients and provides discussion on the clinical value of antibody testing.

Methods

Patients

A confirmed COVID-19 case and the clinical classification was defined based on the New Coronavirus Pneumonia Prevention and Control Program (4th edition) published by the National Health Commission of China. This study enrolls a total of 173 cases of COVID-19, where all patients were admitted to the Shenzhen Third People's Hospital between Jan 11 and Feb 9, 2020, and were willing to donate their blood samples. All enrolled cases were confirmed to be infected with SARS-CoV-2 by use of real-time RT-PCR (rRT-PCR) on samples from the respiratory tract. For all enrolled patients, the date of illness onset, clinical classification, RNA testing results during the hospitalization period, and the personal demographic information were obtained from the clinical records. This study was reviewed and approved by the Medical Ethical Committee of Shenzhen Third People's Hospital (approval number 2020-0018). Written informed consent was obtained from each enrolled patient.

Antibody measurement

The total antibody (Ab), IgM antibody and IgG antibody against SARS-CoV-2 in plasma samples were tested using enzyme linked immunosorbent assay (ELISA) kits supplied

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by Beijing Wantai Biological Pharmacy Enterprise Co., Ltd., China, according to the manufacturer's instructions. Briefly, the ELISA for total antibodies detection was developed based on double-antigens sandwich immunoassay (Ab-ELISA), using mammalian cell expressed recombinant antigens contained the receptor binding domain (RBD) of the spike protein of SARS-CoV-2 as the immobilized and HRP-conjugated antigen. The IgM µ-chain capture method (IgM-ELISA) was used to detect the IgM antibodies, using the same HRP-conjugate RBD antigen as the Ab-ELISA. The IgG antibodies were tested using indirect ELISA kit (IgG-ELISA) based on a recombinant nucleoprotein antigen. The specificity of the assays for Ab, IgM and IgG was determined as 99.1% (211/213), 98.6% (210/213) and 99.0% (195/197) by testing of samples collected from healthy individuals before the outbreak of SARS-CoV-2.

Statistical analysis

For continue variables description, mean with standard deviation was used for normal distribution data and median with interquartile range (IQR) was used for non-normal distribution data. Cumulative seroconversion rates were calculated by Kaplan-Meier method. The association between antibody level and severity of illness were estimated by generalized estimating equations (GEE) model with logit link function. All statistical analysis was conducted by SAS 9.4 (SAS Institute, Cary, NC, USA).

Role of the funding source

The funders had no role in study design, data collection, data analysis, data interpretation, or writing of the report.

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Results

The characterization of patients

Among totally 368 cases of COVID-19 patients admitted in the hospital (before Feb 9, 2020), 173 patients of them (47%) were enrolled in the study (Table 1). All patients had acute respiratory infection syndromes and/or abnormalities in chest CT images accompanied by detectable SARS-CoV-2 RNA in respiratory sample since illness onset for at least one time. The median age of the studied patients was 48 years (IQR, 35-61 years) and 51.4% were females. There were 126 patients had clear epidemiological travel/residence history in Wuhan (116) and other cities of Hubei province (10), respectively (Table 1). Among them, 32 (18.5%) were in critical illness condition with ARDS or oxygen saturation < 93% who required mechanical ventilation either invasively or non-invasively, and the remaining 141 (81.5%) had mild to moderate syndromes were in non-critical condition. By February 19, a total of 62 patients (35.8%, 54 were in non-critical group and 8 were in critical group) were recovered and discharged from hospital and 2 (1.1%, both were in critical group) patients died with underlying chronic disease.

Seroconversion of antibodies against SARS-CoV-2 in COVID-19 patients

A total of 535 plasma samples collected during the hospitalization period of the 173 patients were tested for antibodies against SARS-CoV-2. The seroconversion rate for Ab, IgM and IgG was 93.1% (161/173), 82.7% (143/173) and 64.7% (112/173), respectively (Table 1). Twelve patients who remained seronegative for Ab testing possibly due to that their samples involved were all collected at the early stage of

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illness (10 earlier than day 10, the other two on day 11 and 13 after onset). The cumulative seroconversion curve showed that the rate for Ab and IgM reached 100% around 1 month of illness day. The seroconversion was sequential appeared for Ab, IgM and then IgG (Figure 1A). The median time to Ab, IgM and IgG seroconversion was 11, 12 and 14 days, separately. One of two patients tested on the onset day was seropositive. Overall, the seroconversion of Ab was significantly quicker than that of IgM ($p = 0.012$) and IgG ($p < 0.001$), that possibly attributed to the double-antigen sandwich form of the assay used which usually show much higher sensitivity than capture assay (IgM) and indirect assay (IgG). Moreover, all isotypes of antibodies against viral antigen, including IgM, IgA and IgG, can be detected by double-sandwich based assay, which may also contribute to the superior performance of Ab test. In comparisons of seroconversion rates of antibodies between critical and non-critical patients, none of the three markers showed significant difference (Figure 1B, 1C and ID, $p > 0.05$).

The diagnosis value of antibody assays for patients in different time after onset

We analyzed the detectability of RNA test and antibody assays according to the time course since illness onset in the cohort. As the results shown in Figure 2 and Table 2, in the early phase of illness within 7-day since onset, the RNA test had the highest sensitivity of 66.7%, whereas the antibody assays only presented a positive rate of 38.3%. However, the sensitivity of Ab overtook that of RNA test since day 8 after onset and reached over 90% across day 12 after onset (Figure 2). In samples from patients during day 8-14 after onset, the sensitivities of Ab (89.6%), IgM (73.3%) and IgG

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(54.1%) were all higher than that of RNA test (54.0%). Among samples from patients in later phase (day 15-39 since onset), the sensitivities of Ab, IgM and IgG were 100.0%, 94.3% and 79.8%, respectively. In contrast, RNA was only detectable in 45.5% of samples of day 15-39. Further analyses demonstrated that in patients with undetectable RNA in their respiratory tract samples collected during day 1-3, day 4-7, day 8-14 and day 15-39 since onset, there were 28.6% (2/7), 53.6% (15/28), 98.2% (56/57) and 100% (30/30) had detectable antibody in total Ab assay, respectively (Table 3). Whatever, combined use of the tests of RNA and Ab improved markedly the sensitivities of pathogenic-diagnosis for COVID-19 patients in different phases (Table 2, Ab+RNA).

The dynamics of antibody levels with the progress and severity of disease

To investigate the dynamics of antibody level according disease course, the antibody levels were expressed using the relative binding signals compared to the cutoff value of each assay (S/CO). The longitudinal changes of antibody and RNA in 9 representative patients, including 6 in non-critical group (Figure 3A) and 3 in critical group (Figure 3B), were presented in Figure 3. The first positive time point of RNA tests appeared earlier than that of Ab in 7 of 9 patients, except for the case 185 (Ab was detectable 2 days earlier than RNA) and the case 111 (at the same day). It should be noted that the risings of antibodies were not always accompanied by RNA clearance, particularly in the 3 critical patients. This finding suggested that antibodies may not be sufficient to clear the virus. In the pooled analyses on all involved patients, the average antibody levels showed a marked increase since about 1-week after onset and

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continuously elevated during the next 2 weeks (Figure 4A). Further analyses suggested that there was no significant difference on the average S/CO value of Ab tests between critical and non-critical patients before day 12 after onset (Figure 4B). However, critical patients showed significantly higher Ab S/CO values than non-critical cases in about 2-week after onset ($p = 0.02$) and this association was not significant in either IgM or IgG tests (data not shown). For further exploration, we determined the relative Ab titer of these samples (expressed as relative optical density, rOD) by serial dilution measurements of each sample. The quantitative data of Ab titers also revealed a significant difference ($p = 0.004$) between patients in critical and non-critical groups (Figure 4C). Multivariate longitudinal GEE analyses suggested that age ($\beta = 0.139$, $p < 0.001$), gender ($\beta = 1.415$, $p = 0.006$) and Ab titer ($\beta = 0.336$, $p = 0.006$) were the independent factors strongly associated with the clinical classification based on the severity (Table 4).

Discussion

The present data demonstrated that typical antibody responses to acute viral infection are wildly induced in COVID-19 patients. All patients were seroconverted, except for 12 patients with only samples collected at the early stage of illness (before 13 day of onset). To be expected, the total antibody was first detected, followed by IgM and IgG. The seroconversion rate and the antibody levels increased rapidly during the first two weeks, the cumulative seropositive rate reached 50% on the 11th day and 100% on the 39th day. The seroconversion time of total antibody, IgM and IgG antibodies appeared consequently ($p < 0.05$) with a median seroconversion day of 11, 12 and 14,

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respectively. Due to the lack of blood samples collected from patients in the later stage of illness, how long the antibodies could last remained unknown. Our results demonstrated an excellent sensitivity of Ab test in detections of patient's samples after 1-week since onset. Notably, even in the early stages of the illness within 7-day, some patients with negative nucleic acid findings could be screened out through antibody testing. Combining RNA test and antibody test significantly raised the sensitivity for detecting patients ($p < 0.001$). Above findings indicate that the antibody detection be an important supplement to RNA detection during the illness course.

Up to date, the confirm diagnosis of SARS-CoV-2 infection entirely depend on the viral nucleic acid testing. Even though with high analytical sensitivity, the real-world performance of PCR based RNA testing is unsatisfied. Many suspected patients had to be tested for several days with multiple samples before confirm diagnosis were made, and during the waiting time they might have not enough priority to receive relevant treatments and quarantine managements.[3] These problems make the timely diagnosis of SARS-CoV-2 infection one of the bottlenecks for adapting relevant actions to limit the damage of current outbreak. Our study provided robust evidences that: 1) the acute antibody response in SARS-CoV-2 infection patient is very similar to many other acute viral infections; 2) the serological testing can be a powerful approach in achieving timely diagnosis of SARS-CoV-2 infection; and 3) the total antibody is more sensitive than IgM and IgG for detecting SARS-CoV-2 infection.

Thus, the antibody testing might play vital roles in the following settings: 1) for the suspected patient under the initial visit or clinically diagnosed patients has not been

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confirmed by RNA testing, the positive result of antibody increases the confidence to make a COVID-19 diagnosis; 2) for healthy close contact who is in the quarantine period, he/she should be deemed as a probable carriers if antibody positive, then the RNA should be tested more frequently and the close contacts of him/her should be observed; 3) for the RNA confirmed patient, seropositive indicates that the specific immune response had been induced. Besides, epidemiological studies could be conducted using immunoassays. Additional, it can play an important role in searching potential animal hosts for SARS-CoV-2 using Ab-ELISA because the double antigen sandwich method makes it free from species restriction. It has been less than three months since the SARS-CoV-2 virus first invaded human society, and the prevalence of antibody against SARS-CoV-2 is nearly zero. Therefore, at least during the current outbreak which is likely to continue to May or June 2020, individuals who are seropositive could be a probably preceding infector of SARS-CoV-2. During this short period, therefore, the total antibody could be considered as a recent infection marker similar as IgM antibody. Our data showed that the sensitivity of total antibody testing is higher than IgM or IgG. Therefore, the total antibody detection should be given high priority to be implemented in current clinical and public health practice. If, unfortunately, SARS-CoV-2 become a common respiratory transmission pathogen lasting in human society, such as influenza viruses or low-pathogenicity types of coronaviruses, rather than be completely eradicated as its relative SARS-CoV-1 virus, the serological diagnosis of acute SARS-CoV-2 infection will more depend on the detection of IgM antibody in post-epidemic areas, such as Wuhan, China, in the subsequent epidemic

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seasons. The total antibody and IgG antibody could be used to understand the epidemiology of SARS-CoV-2 infection and to assist in determining the level of humoral immune response in patients. Even then, the total antibody will be a more sensitive marker for sentinel monitoring of imported cases in naive community.

In addition to the diagnosis value of Ab test, our study revealed a strong positive correlation between clinical severity and antibody titer since 2-week after illness onset, for the first time in COVID-19 patients. The results suggested that a high titer of total antibodies against the virus may be considered as a risk factor of critical illness, independently from older age, male gender and comorbidities (Table 4). Although it was still unclear how the causal relation between hormonal response and illness severity, the results raise a possible usage of the high antibody titer as a surrogate marker for worse clinical prognosis. Furthermore, it might be an evidence for the possibility of antibody-dependent disease enhancement effects, which was commonly found in SARS-CoV-1 patients.[11-13] Whatsoever, our finding suggested that the clinical meanings of the level of antibody against SARS-CoV-2 during the acute phase of infection warrant further study.

It should be noted that there were some limitations of this study. First, for most of RNA tests of the patients were based on upper respiratory tract specimens, the positive rate may be higher in detection using lower respiratory tract specimens, such as bronchoalveolar lavage fluid, deep tracheal aspirates, and induced sputum may yield higher sensitivity for RNA tests. Second, we cannot evaluate the persistence of antibodies because samples were collected during the acute illness course of patients.

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Third, although it had shown good specificity in healthy people, the cross-reactivity among the different coronaviruses cannot be accurately assessed because we cannot obtain blood samples from SARS-CoV-1 and other coronaviruses infection patients. Future studies are needed to a better understanding of the antibody response profile of SARS-CoV-2 infection.

In conclusion, the findings demonstrate that antibody tests have important diagnosis value in addition to RNA tests. These findings provide strong evidence for the routine application of serological antibody assays in the diagnosis and clinical management of COVID-19 patients.

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Contributors

ZZ, NS-X, JZ, LL, S-X G and QY had the idea and for designed the study. ZZ, JZ, LL and S-X G had full access to all data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. JJ-Z, HY-W, XJ-L, XW, JY, JZ-L, QS, FX-W, YX-L, ZQ-W, QH, LL and ZZ had roles in the clinical management, patient recruitment, sample preparation and clinical data collection. JJ-Z, HY-W, WL, XW, TD-L, CM-H, ZY-L, BH and SX-G had roles in the antibody detection experiments, data collection and analysis. QY, YY-S, SX-G, JZ and ZZ had roles in statistical analysis. JJ-Z, QY, YY-S, SX-G, LL, JZ, NS-X and ZZ had roles in data interpretation. QY, YY-S, SX-G, JZ and ZZ wrote the manuscript. TY-Z, NS-X and ZZ contributed to critical revision of the report. All authors reviewed and approved the final version of the manuscript.

Declaration of interests

We declare no competing interests.

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Figure 1. Cumulative incidence of seroconversion of antibodies against SARS-CoV-2 among COVID-19 patients during the acute phase since illness onset. (A) Cumulative incidence of seroconversion of Ab, IgM and IgG among 173 patients of this study. Kaplan–Meier curves for time to seroconversion of Ab (B), IgM (C) and IgG (D) for comparison of patients in critical condition or not. P values were determined by Log-Rank test to compare different markers.

Figure 2. Profiling of sensitivity performances of RNA, Ab, IgM and IgG in time series since illness onset. A heat-map of detection of SARS-CoV-2 infection according to the time (days) since onset by a single RNA or antibody test.

Figure 3. Dynamic profiling of viral RNA and antibodies in representative COVID-19 patients since onset of disease. The changes of the levels of RNA in in upper respiratory specimens (nasal and/or throat swabs) and antibodies (total Ab, IgM and IgG) in plasma of 9 patients were presented. Among these cases, 6 were in normal to moderate illness condition (A) and 3 were in critical condition (B). The cutoff values for antibody tests were S/CO=1 (plotted to left-Y axis) and was CT=40 for RNA detection (plotted to right-Y axis). RNA negative samples are denoted with a CT of 45. The blue area indicated the antibody seronegative zone, whereas the purple area indicated undetectable RNA zone. Meanwhile, a purple broken line was used to indicate the first time point with detectable RNA and a red broken line was used to indicate the first antibody seroconversion (total Ab) time point.

Figure 4. The average levels of antibodies against SARS-CoV-2 among COVID-19 patients since illness onset. (A) Comparison of the average S/CO value of in between total Ab, IgG and IgM. Comparison of the average S/CO value (B) and relative quantitative titer (C) of Ab test between critical and non-critical patients. The medians of antibody detection value (S/CO for tests of Ab, IgM and IgG, for panel A and B) and of total Ab titer (rOD, for panel C) of samples at the same time point since onset was used to plot the graph. Patient's samples collected from day 1-3, 4-6, 7-9, 10-12, 13-15, 16-18, 19-21, 22-39 since illness onset were pooled for analysis. Four parameter logistic (4PL) fitting curves were used to show the rising trend of antibodies (total Ab, IgG, IgM).

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Table 1. Demographics and clinical characteristics of patients and sample cohort with COVID-19 in this study.

	Total	Non-critical	Critical
Number	173	141	32
Gender, n(%)			
Male	84 (49)	63 (45)	21 (66)
Female	89 (51)	78 (55)	11 (34)
Age, median(IQR)	48 (35-61)	41 (33-56)	64 (58-66)
Epidemiological exposure (1 month)			
Been to Wuhan	116 (67)	92 (65)	24 (75)
Been to other Cities of Hubei	10 (5.8)	8 (6.4)	1 (3.1)
Unclear or unknown	47 (27)	26 (28)	7 (22)
Comorbidities, n(%)			
Hypertension	20 (12)	11 (7.8)	9 (28)
Diabetes	11 (6.4)	6 (4.3)	5 (16)
Coronary heart disease	3 (1.8)	0	3 (9.4)
Others*	13 (7.6)	10 (7.1)	3 (9.4)
Any	41 (24)	26 (18)	15 (47)
Clinical outcome, n(%)			
Recovery	62 (36)	54 (38)	8 (25)
Still in hospital	109 (63)	89 (62)	22 (69)
Death	2 (1.2)	0	2 (6.3)
RNA confirmed time since onset, days, median(IQR) †	4 (3-6)	4 (3-6)	6 (4-10)
Days since onset of 1st sample for antibody test, median(IQR) ‡	7 (5-10)	7 (5-9)	10 (6-16)
RNA (TS/NS) at the involved 1st sample			
positive, n(%)	89 (51)	73 (52)	16 (50)
negative, n(%)	65 (38)	55 (39)	10 (31)

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no data, n(%)	19 (11)	13 (9.2)	6 (19)
rRT-PCR CT, median(IQR)	29 (25-31)	29 (24-32)	29 (28-31)
No. of antibody tested samples			
Of each case, median(IQR)	3 (2-4)	3 (2-4)	4 (3-5)
Total	535	404	131

Data are presented as medians (interquartile ranges, IQR) and n(%). TS, throat swabs; NS, nasal swabs. * The other disease included chronic hepatitis B infection (n=5), tumors (n=2), obstructive sleep apnea syndrome (n=1), chronic bronchitis (n=1), hyperlipidemia (n=1), renal insufficiency (n=1), tuberculosis (cured, n=1) and fatty liver disease (n=1). † The data indicated the time of confirmation for positive for 2019-nCoV infection by using rRT-PCR on respiratory sample since illness onset. ‡ The data indicated the time since illness onset of the first plasma sample of patients involved for serological test in this study.

Table 2. Performance of different detections in samples at different time since onset of patients.

Days after onset	n	RNA n(+)	RNA Sensitivity (%, 95%CI)	Ab n(+)	Ab Sensitivity (%, 95%CI)	IgM n(+)	IgM Sensitivity (%, 95%CI)	IgG n(+)	IgG Sensitivity (%, 95%CI)	RNA+Ab n(+)	RNA+Ab Sensitivity (%, 95%CI)
Total	173	112$	67.1 (59.4, 74.1)	161	93.1 (88.2, 96.4)	143	82.7 (76.2, 88)	112	64.7 (57.1, 71.8)	172	99.4 (96.8, 100.0)
1-7	94	58$	66.7 (55.7, 76.4)	36	38.3 (28.5, 48.9)	27	28.7 (19.9, 39.0)	18	19.1 (11.8, 28.6)	74	78.7 (69.1, 86.5)
8-14	135	67$	54.0 (44.8, 63.0)	121	89.6 (83.2, 94.2)	99	73.3 (65.0, 80.6)	73	54.1 (45.3, 62.7)	131	97.0 (92.6, 99.2)
15-39	90	25$	45.5 (32.0, 59.5)	90	100.0 (96.0, 100.0)	83*	94.3 (87.2, 98.1)	71#	79.8 (69.9, 87.6)	90	100.0 (96.0, 100.0)

* Two patients missed IgM tests due to inadequate plasma samples. # One patient missed IgG tests due to inadequate plasma samples. $ There were 7, 11 and 35 patients had not been performed RNA testing during the 1-7 onset day, 8-14 onset day and 15-39 onset day, respectively.

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Table 3. Serological presence of antibodies against SARS-CoV-2 in patients with undetectable viral RNA at different time since onset of disease.

Days after onset	No. of patients with undetectable RNA*	Detectable antibody in plasma, n (%)		
		Ab	IgM	IgG
1-3	7	2 (28.6)	2 (28.6)	2 (28.6)
4-7	28	15 (53.6)	12 (42.9)	8 (28.6)
8-14	57	56 (98.2)	45 (78.9)	40 (70.2)
15-39	30	30 (100)	28 (93.3)	22 (73.3)

* RNA was tested using throat/nasal swab sample.

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Table 4. Univariate and multivariate analysis of factors associated with patients in critical condition.

Characteristics	Univariate	Multivariate			
	p value	coefficient	Standard error	95% CI	p value
Age	<0.001	0.138	0.026	0.087-0.190	<0.001
Gender	0.056	1.415	0.512	0.412-2.418	0.006
Comorbidities	0.001	0.060	0.536	-0.991-1.112	0.91
Relative Ab titer	0.004	0.336	0.123	0.095-0.576	0.006

p value <0.05 indicates significant differences between critical patients and non-critical patients as determined by GEE model analysis.

Figure 1

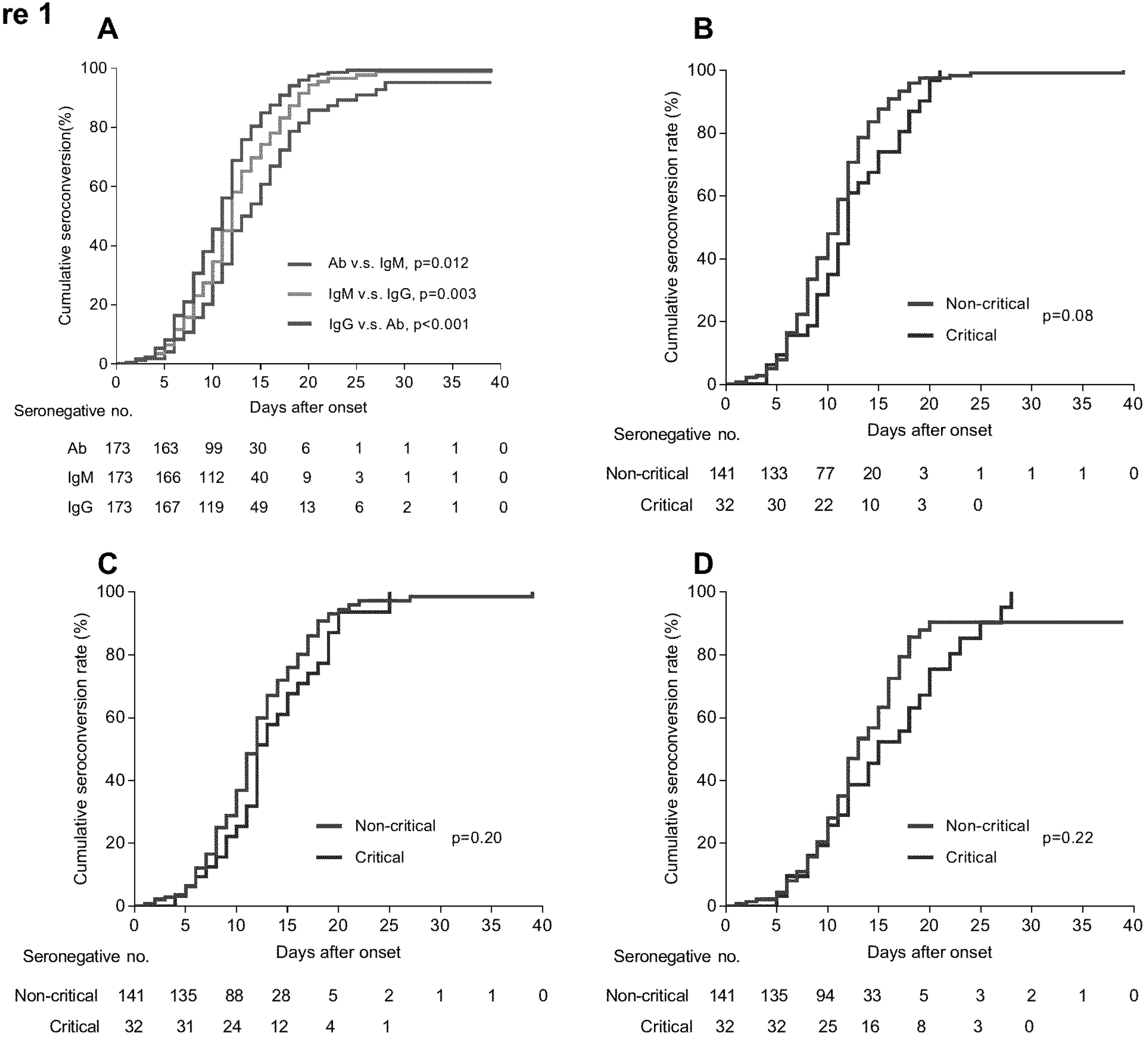

A
Cumulative seroconversion(%)
Days after onset
Ab v.s. IgM, p=0.012
IgM v.s. IgG, p=0.003
IgG v.s. Ab, p<0.001
Seronegative no.
Ab 173 163 99 30 6 1 1 1 0
IgM 173 166 112 40 9 3 1 1 0
IgG 173 167 119 49 13 6 2 1 0
B
Cumulative seroconversion rate (%)
Days after onset
Non-critical
Critical
p=0.08
Seronegative no.
Non-critical 141 133 77 20 3 1 1 1 0
Critical 32 30 22 10 3 0
C
Cumulative seroconversion rate (%)
Days after onset
Non-critical
Critical
p=0.20
Seronegative no.
Non-critical 141 135 88 28 5 2 1 1 0
Critical 32 31 24 12 4 1
D
Cumulative seroconversion rate (%)
Days after onset
Non-critical
Critical
p=0.22
Seronegative no.
Non-critical 141 135 94 33 5 3 2 1 0
Critical 32 32 25 16 8 3 0

Figure 2

Days since onset

Positive (%)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	>21	Total
RNA	50.0	62.5	71.4	73.3	71.4	62.9	55.6	62.2	44.7	41.9	46.4	42.9	47.8	30.0	33.3	40.0	27.3	45.5	22.2	50.0	40.0	48.0	49.7
Ab	50.0	25.0	17.7	29.4	27.3	36.8	41.4	57.1	68.2	69.7	83.3	95.0	92.0	91.3	100.0	100.0	87.5	94.1	95.2	100.0	100.0	97.4	72.2
IgM	50.0	25.0	17.7	11.8	27.3	24.3	37.9	40.5	34.1	64.5	70.0	76.9	83.3	80.0	85.7	91.3	79.2	73.3	90.0	88.9	66.7	94.7	59.5
IgG	50.0	12.5	5.9	0	18.2	18.9	25.0	23.8	30.2	56.7	36.7	57.9	48.0	42.9	68.2	82.6	66.7	56.3	80.0	77.8	66.7	75.0	44.2

Scale: 0, 20, 40, 60, 80, 100

Sample no.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	>21	Total
RNA	2	8	14	15	21	35	27	37	38	31	28	35	23	20	18	20	11	11	9	6	5	25	439
Ab	2	8	17	17	22	38	29	42	44	33	30	40	25	23	24	25	24	17	21	9	6	39	535
IgM	2	8	17	17	22	37	29	42	44	31	30	39	24	20	21	23	24	15	20	9	6	38	518
IgG	2	8	17	17	22	37	28	42	43	30	30	38	25	21	22	23	24	16	20	9	6	36	516

Figure 3

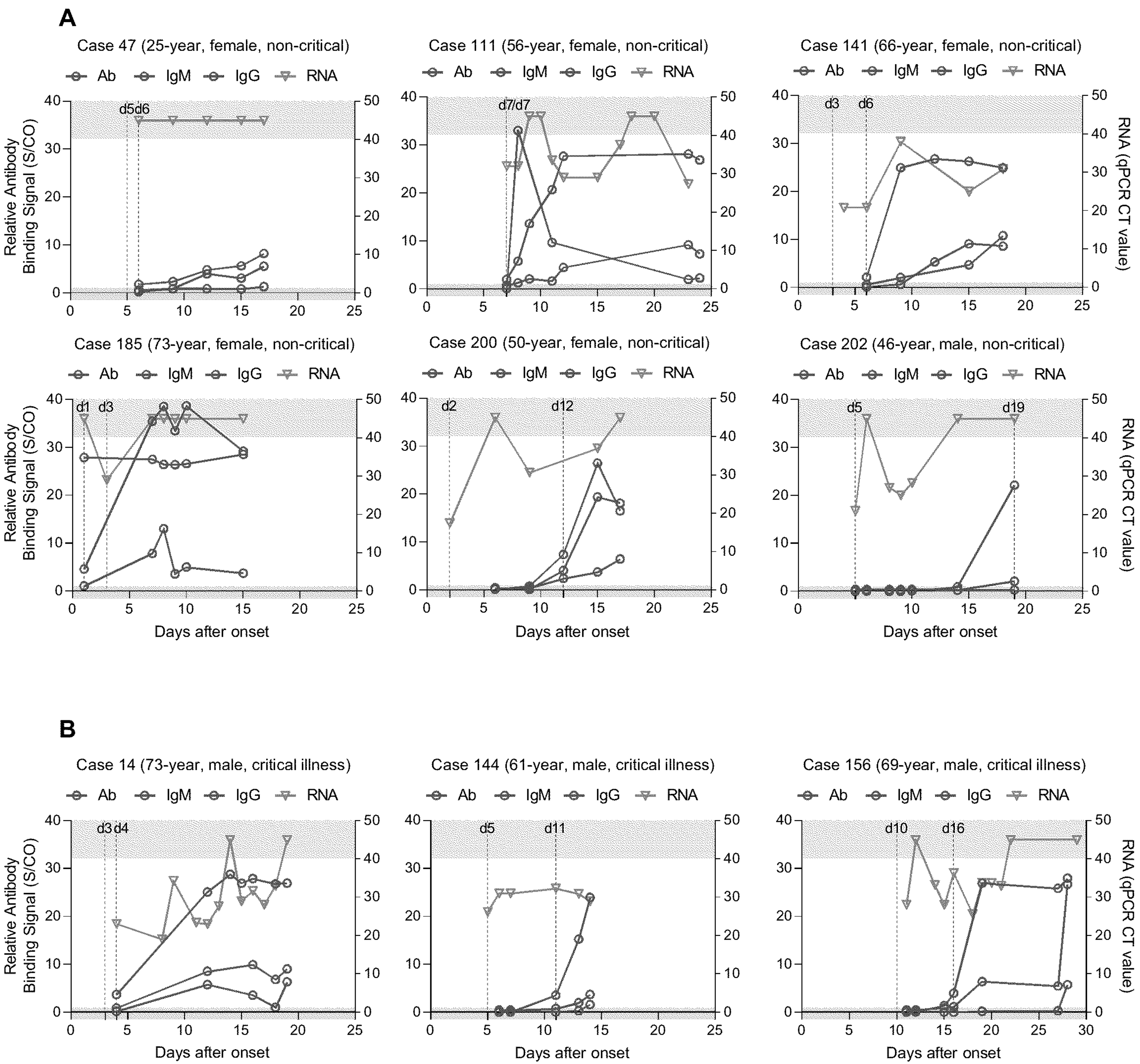
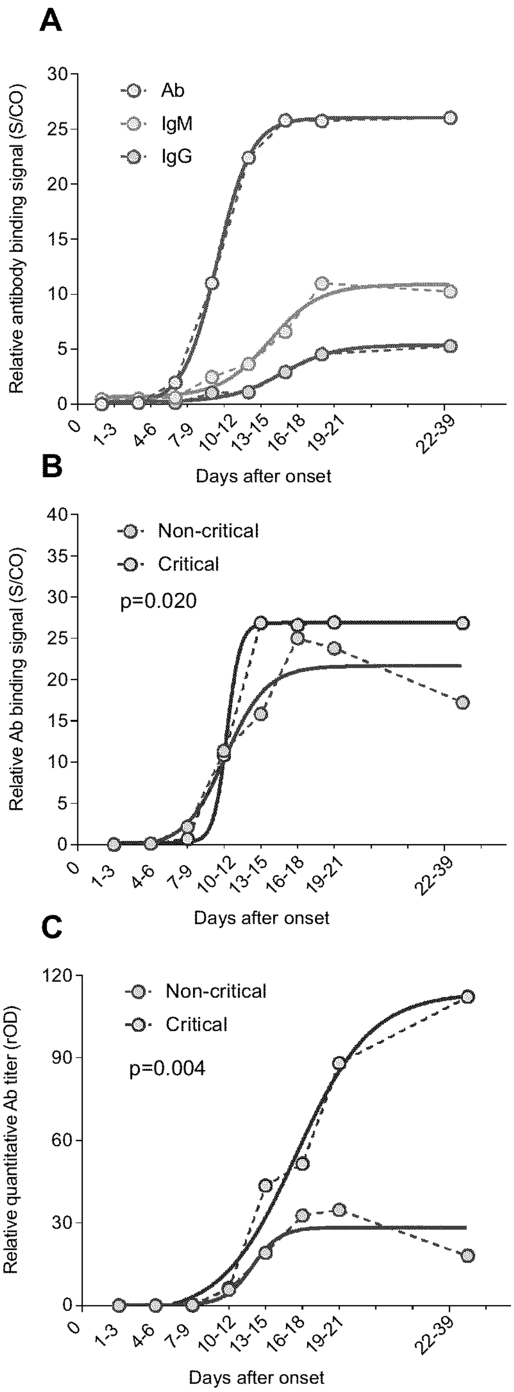

A
Case 47 (25-year, female, non-critical)
Case 111 (56-year, female, non-critical)
Case 141 (66-year, female, non-critical)
Case 185 (73-year, female, non-critical)
Case 200 (50-year, female, non-critical)
Case 202 (46-year, male, non-critical)
B
Case 14 (73-year, male, critical illness)
Case 144 (61-year, male, critical illness)
Case 156 (69-year, male, critical illness)
Ab
IgM
IgG
RNA
Relative Antibody Binding Signal (S/CO)
RNA (qPCR CT value)
Days after onset
d5
d6
d7/d7
d3
d1
d2
d12
d19
d4
d11
d10
d16

Figure 4


A
Ab
IgM
IgG
Relative antibody binding signal (S/CO)
30
25
20
15
10
5
0
0
1-3
4-6
7-9
10-12
13-15
16-18
19-21
22-39
Days after onset
B
Non-critical
Critical
p=0.020
Relative Ab binding signal (S/CO)
40
35
30
25
20
15
10
5
0
0
1-3
4-6
7-9
10-12
13-15
16-18
19-21
22-39
Days after onset
C
Non-critical
Critical
p=0.004
Relative quantitative Ab titer (rOD)
120
90
60
30
0
0
1-3
4-6
7-9
10-12
13-15
16-18
19-21
22-39
Days after onset

To: Baertlein, Cheryl R.[baertlein.cheryl@mayo.edu]; Aaron Tobian[atobian@jhmi.edu]; Anaar Eastoak-Siletz[AEastoak-Siletz@mednet.ucla.edu]; Andrew Pekosz[apekosz1@jhu.edu]; Anthony Bowen[abowen@jhmi.edu]; Arturo Casadevall[acasade1@jhu.edu]; Bauer, Philippe R., M.D., Ph.D.[Bauer.Philippe@mayo.edu]; Boris Juelg[bjulg@mgh.harvard.edu]; Bryan Lau[blau1@jhu.edu]; Chris Amos[Chris.Amos@bcm.edu]; Constance Benson[cbenson@health.ucsd.edu]; Craig Hooper[woh1@cdc.gov]; Dan Cooper[dcooper@hs.uci.edu]; David Thomas[dthomas@jhmi.edu]; Donald Forthal[dnfortha@hs.uci.edu]; Donald Siegel[siegeld@pennmedicine.upenn.edu]; Elisa Ignatius[eignati1@jhmi.edu]; Eric Gehrie[egehrie1@jhmi.edu]; Evan Bloch[ebloch2@jhmi.edu]; Flor Munoz-Rivas[florm@bcm.edu]; Hana El Sahly[Hana.ElSahly@bcm.edu]; Hua Shan[hshan@stanfordhealthcare.org]; Ian Lipkin[wil2001@columbia.edu]; James Campbell[jcampbel@som.umaryland.edu]; James Musser[JMMusser@houstonmethodist.org]; Jeffrey Henderson[hendersonj@wustl.edu]; John Beigel[jbeigel@niaid.nih.gov]; John Mellors[jwm1@pitt.edu]; John Perfect[john.perfect@duke.edu]; Jonathan Zenilman[jzenilma@jhmi.edu]; Joyner, Michael J., M.D.[joyner.michael@mayo.edu]; Lewis Liise-Anne Pirofski[l.pirofski@einsteinmed.org]; Lisa Maragakis[lmaraga1@jhmi.edu]; Michael Nelson[nelson.1.michael2.civ@mail.mil]; Nathan Theilman[n.thielman@duke.edu]; Nicholson, Wayne T. (Nick), M.D., Pharm.D.[Nicholson.Wayne@mayo.edu]; Nigel Paneth[paneth@msu.edu]; Noah Merin[noah.merin@cshs.org]; Paul Auwaerter[pauwaert@jhmi.edu]; Paul Blaier[pblair6@jhmi.edu]; Peter Hotez[hotez@bcm.edu]; Baric, Ralph S[rbaric@email.unc.edu]; Reid, Joel M., Ph.D.[reid@mayo.edu]; Robert Atmar[ratmar@bcm.edu]; Robert Finberg[robert.finberg@umassmed.edu]; Robert Schooley[rschooley@health.ucsd.edu]; Shmuel Shoham[sshoham1@jhmi.edu]; Siddhartha Jaiswal[sjaiswal@stanford.edu]; Stephan Kadauke[KadaukeS@email.chop.edu]; Stephen Gould[sgould2@jhmi.edu]; Stubbs, James R., M.D.[Stubbs.James@mayo.edu]; Tebas Pablo[pablo.tebas@pennmedicine.upenn.edu]; Theel, Elitza S., Ph.D.[Theel.Elitza@mayo.edu]; van Buskirk, Camille M. (Camille M.), M.D.[vanBuskirk.Camille@mayo.edu]; Vishesh Chhibber[vchhibber@nshs.edu]; Winters, Jeffrey L., M.D.[Winters.Jeffrey@mayo.edu]; Yukari Manage[ymanabe@jhmi.edu]
From: Cooper, Richard[Rcooper@luc.edu]
Sent: Wed 3/18/2020 11:55:54 AM (UTC-04:00)
Subject: Re: No reinfection and titer data in COVID Plasma
Imperial CFR.pdf

May have seen this - Imperial College estimates from China -

Best guess true case fatality rate - 1.38% (steep age gradient): infection (counts asymptomatic people) fatality rate = 0.66%.

Richard Cooper, MD
Prof. and Chair, Public Health Sciences
Parkinson School of Health Sciences
and Public Health
rcooper@luc.edu

From: Baertlein, Cheryl R. <baertlein.cheryl@mayo.edu>
Sent: Wednesday, March 18, 2020 10:48 AM
To: Aaron Tobian <atobian@jhmi.edu>; Anaar Eastoak-Siletz <AEastoak-Siletz@mednet.ucla.edu>; Andrew Pekosz <apekosz1@jhu.edu>; Anthony Bowen <abowen@jhmi.edu>; Arturo Casadevall <acasade1@jhu.edu>; Bauer, Philippe R., M.D., Ph.D. <Bauer.Philippe@mayo.edu>; Boris Juelg <bjulg@mgh.harvard.edu>; Bryan Lau <blau1@jhu.edu>; Chris Amos <Chris.Amos@bcm.edu>; Constance Benson <cbenson@health.ucsd.edu>; Craig Hooper <woh1@cdc.gov>; Dan Cooper <dcooper@hs.uci.edu>; David Thomas <dthomas@jhmi.edu>; Donald Forthal <dnfortha@hs.uci.edu>; Donald Siegel <siegeld@pennmedicine.upenn.edu>; Elisa Ignatius <eignati1@jhmi.edu>; Eric Gehrie <egehrie1@jhmi.edu>; Evan Bloch <ebloch2@jhmi.edu>; Flor Munoz-Rivas <florm@bcm.edu>; Hana El Sahly <Hana.ElSahly@bcm.edu>; Hua Shan <hshan@stanfordhealthcare.org>; Ian Lipkin <wil2001@columbia.edu>; James Campbell <jcampbel@som.umaryland.edu>; James Musser <JMMusser@houstonmethodist.org>; Jeffrey Henderson <hendersonj@wustl.edu>; John Beigel <jbeigel@niaid.nih.gov>; John Mellors <jwm1@pitt.edu>; John Perfect <john.perfect@duke.edu>; Jonathan Zenilman <jzenilma@jhmi.edu>; Joyner, Michael J., M.D. <joyner.michael@mayo.edu>; Lewis Pollack Liise-Anne Pirofski <l.pirofski@einsteinmed.org>; Lisa Maragakis <lmaraga1@jhmi.edu>; Michael Nelson <nelson.1.michael2.civ@mail.mil>; Nathan Theilman <n.thielman@duke.edu>; Nicholson, Wayne T. (Nick), M.D., Pharm.D. <Nicholson.Wayne@mayo.edu>; Nigel Paneth <paneth@msu.edu>; Noah Merin <noah.merin@cshs.org>; Paul Auwaerter <pauwaert@jhmi.edu>; Paul Blaier <pblair6@jhmi.edu>; Peter Hotez <hotez@bcm.edu>; Ralph Baric <rbaric@email.unc.edu>; Reid, Joel M., Ph.D. <reid@mayo.edu>; Cooper, Richard <Rcooper@luc.edu>; Robert Atmar <ratmar@bcm.edu>; Robert Finberg <robert.finberg@umassmed.edu>; Robert Schooley <rschooley@health.ucsd.edu>; Shmuel Shoham <sshoham1@jhmi.edu>; Siddhartha Jaiswal <sjaiswal@stanford.edu>; Stephan Kadauke <KadaukeS@email.chop.edu>; Stephen Gould <sgould2@jhmi.edu>; Stubbs, James R., M.D. <Stubbs.James@mayo.edu>; Tebas Pablo <pablo.tebas@pennmedicine.upenn.edu>; Theel, Elitza S., Ph.D. <Theel.Elitza@mayo.edu>; van Buskirk, Camille M. (Camille M.), M.D. <vanBuskirk.Camille@mayo.edu>; Vishesh Chhibber <vchhibber@nshs.edu>; Winters, Jeffrey L., M.D.

<Winters.Jeffrey@mayo.edu>; Yukari Manage <ymanabe@jhmi.edu>
Subject: FW: No reinfection and titer data in COVID Plasma

****
Sent on behalf of Michael J. Joyner, MD
****
Please review attached PDFs

From: Joyner, Michael J., M.D.
Sent: Wednesday, March 18, 2020 9:02 AM
To: Maryann Smith (maryann.smith@jhu.edu); Baertlein, Cheryl R.
Subject: No reinfection and titer data in COVID Plasma

Pls e-mail to group

All, my post-docs are watching the emerging lit. 2 good pieces of news.

From: Senefeld, Jonathon W. (Jack), Ph.D.
Sent: Wednesday, March 18, 2020 8:25 AM
To: Joyner, Michael J., M.D.
Cc: Wiggins, Chad C., Ph.D.; Shepherd, John-Roger A. (John), M.D.
Subject: COVID Plasma

Hi Mike,

FYI—I saw a new study this morning from monkeys providing substantial credence to your idea about harvested plasma from COVID-19 patients…Please see the attached PDF.

Also, another study of antibody responses to COVID-19 in humans…as suggested in the IRB, 2 weeks may be a sweet spot for harvesting anti-bodies. This PDF is also attached.

Kind regards,

Jack

Jack Senefeld, Ph.D. | Research Fellow | Anesthesiology |
Mayo Clinic | 200 First Street SW | Rochester, MN 55905 | mayoclinic.org

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Estimates of the severity of COVID-19 disease

Robert Verity[+1], Lucy C Okell[+1], Ilaria Dorigatti[+1], Peter Winskill[+1], Charles Whittaker[+1], Natsuko Imai[1], Gina Cuomo-Dannenburg[1], Hayley Thompson[1], Patrick GT Walker[1], Han Fu[1], Amy Dighe[1], Jamie T Griffin[2], Marc Baguelin[1], Sangeeta Bhatia[1], Adhiratha Boonyasiri[1], Anne Cori[1], Zulma Cucunubá[1], Rich FitzJohn[1], Katy Gaythorpe[1], Will Green[1], Arran Hamlet[1], Wes Hinsley[1], Daniel Laydon[1], Gemma Nedjati-Gilani[1], Steven Riley[1], Sabine van Elsland[1], Erik Volz[1], Haowei Wang[1], Yuanrong Wang[1], Xiaoyue Xi[1], Christl A Donnelly[1,3], Azra C Ghani[1*], Neil M Ferguson[1*].

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Summary

Background: A range of case fatality ratio (CFR) estimates for COVID-19 have been produced that differ substantially in magnitude.

Methods: We used individual-case data from mainland China and cases detected outside mainland China to estimate the time between onset of symptoms and outcome (death or discharge from hospital). We next obtained age-stratified estimates of the CFR by relating the aggregate distribution of cases by dates of onset to the observed cumulative deaths in China, assuming a constant attack rate by age and adjusting for the demography of the population, and age- and location-based under-ascertainment. We additionally estimated the CFR from individual line-list data on 1,334 cases identified outside mainland China. We used data on the PCR prevalence in international residents repatriated from China at the end of January 2020 to obtain age-stratified estimates of the infection fatality ratio (IFR). Using data on age-stratified severity in a subset of 3,665 cases from China, we estimated the proportion of infections that will likely require hospitalisation.

Findings: We estimate the mean duration from onset-of-symptoms to death to be 17.8 days (95% credible interval, crI 16.9–19.2 days) and from onset-of-symptoms to hospital discharge to be 22.6 days (95% crI 21.1-24.4 days). We estimate a crude CFR of 3.67% (95% crI 3.56%-3.80%) in cases from mainland China. Adjusting for demography and under-ascertainment of milder cases in Wuhan relative to the rest of China, we obtain a best estimate of the CFR in China of 1.38% (95% crI 1.23%-1.53%) with substantially higher values in older ages. Our estimate of the CFR from international cases stratified by age (under 60 / 60 and above) are consistent with these estimates from China. We obtain an overall IFR estimate for China of 0.66% (0.39%-1.33%), again with an increasing profile with age.

Interpretation: These early estimates give an indication of the fatality ratio across the spectrum of COVID-19 disease and demonstrate a strong age-gradient in risk.

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Introduction

As of 3rd March 2020, 90,870 cases and 3,112 deaths of the disease COVID-19 caused by a novel coronavirus had been reported worldwide[1]. To date, the majority of these (80,422 cases and 2,946 deaths) have been reported from mainland China with ageographic focus in the city of Wuhan, Hubei province. However, in recent days the rate of increase in cases has been greatest outside China. At present, substantial outbreaks are occurring in the Republic of Korea (4,812 cases), Iran (1,501 cases) and Italy (2,036 cases). However, geographic expansion of the epidemic continues, with cases now reported from all continents[1].

Clinical studies conducted on hospitalised cases show that the onset of COVID-19 is associated with symptoms commonly associated with viral pneumonia, most commonly fever, cough/sore throat and myalgia/fatigue[2–6]. The case definition adopted in China and elsewhere includes further stratification of cases as severe (defined as tachypnoea (≧30 breaths/ min) or oxygen saturation ≤93% at rest, or PaO2/FIO2 <300 mmHg) and critical (respiratory failure requiring mechanical ventilation, septic shock or other organ dysfunction/failure that requires intensive care)[7]. According to the WHO/China Joint Mission Report, 80% of laboratory-confirmed cases in China up to 20 February 2020 have mild-to-moderate disease – including both non-pneumonia and pneumonia cases; whilst 13.8% developed severe disease and 6.1% developed to a critical stage requiring intensive care[8]. In a study of clinical progression in 1,099 patients[4], those at highest risk for severe disease and death included people over the age of 60 years and those with underlying conditions (including hypertension, diabetes, cardiovascular disease, chronic respiratory disease and cancer).

Assessing the severity of COVID-19 is critical to determine both the appropriateness of mitigation strategies and to enable planning for healthcare needs as epidemics unfold. However, crude case fatality ratios (CFRs) obtained from dividing deaths by cases can be misleading[9,10]. Firstly, there can be a period of two to three weeks between a case developing symptoms, subsequently being detected and reported and observing the final clinical outcome. During a growing epidemic the final clinical outcome of most of the reported cases is typically unknown. Simply dividing the cumulative reported number of deaths by the cumulative number of reported cases will therefore underestimate the true CFR early in an epidemic[9–11]. This effect was observed in past epidemics of respiratory pathogens – including SARS[12] and H1N1[9] influenza – and as such is widely recognised. Thus, many of the estimates of the CFR that have been obtained to date for COVID-19 correct for this effect[13–16]. Additionally, however, during the exponentially growing phase of an epidemic, the observed time-lags between the onset of symptoms and outcome (recovery or death) are censored and naïve estimates of the observed times from symptoms onset to outcome provide biased estimates of the actual distributions. Ignoring this effect tends to bias the estimated CFR downwards during the early growth phase of an epidemic.

Secondly, surveillance of a newly emerged pathogen is typically biased towards detecting clinically severe cases, particularly at the start of an epidemic when diagnostic capacity is limited (Figure 1). Estimates of the CFR may thus be biased upwards until the extent of clinically milder disease is determined[9]. Data from the epicentre of the outbreak in Wuhan, China have primarily been detected through hospital surveillance and hence are likely to represent moderate or severe illness, with atypical pneumonia and/or acute respiratory distress being used to define suspected cases eligible for testing[7]. In these individuals, clinical outcomes are likely to be more severe, and therefore any

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estimates of the CFR will be higher. Elsewhere in mainland China and outside, countries and administrative regions alert to the risk of infection being imported via travel initially instituted surveillance for COVID-19 with a broader set of clinical criteria for defining a suspected case. These typically include a combination of symptoms (e.g. cough and fever) combined with recent travel history to the affected region (Wuhan and/or Hubei Province)[2,17]. Such surveillance is therefore likely to detect clinically milder cases but, by initially restricting testing to those with a travel history or link, may have missed other symptomatic cases. More recently, as epidemics have taken off in other countries, cases are now being detected in those with no reported travel links to Wuhan/Hubei province through broader surveillance systems. Some of these cases may represent a milder level of severity – including secondary cases identified via contact-tracing or those identified through sentinel surveillance of influenza-like-illness at primary care[18,19]. In contrast, others will represent the severe end of the disease spectrum with an increasing number identified through hospital surveillance (for example, testing of viral pneumonia) or in a few cases, at post-mortem analysis.

Quantifying the extent of infection overall in the population (including those infected with either mild, non-specific symptoms or who are asymptomatic, as depicted in the bottom of Figure 1) requires random population surveys of infection prevalence. Serological assays provide the best option for obtaining this denominator; however, robust assays are not currently available. The only such data providing an assessment of the level of infection in a subset of the population not presenting with symptoms at present is therefore the PCR infection prevalence surveys conducted in international residents of Wuhan that have been repatriated to their home country.

Here we attempt to adjust for these biases in data sources to obtain estimates of the CFR (proportion of all cases that will eventually die) and infection fatality ratio (IFR, the proportion of all infections that will eventually die) using both individual-level case report data and aggregate case and death counts from mainland China, administrative regions and international case reports. By adjusting for both underlying demography and potential under-ascertainment at different levels of the severity pyramid (Figure 1), these estimates should be broadly applicable across a range of settings to inform health planning whilst more detailed case data accrue.

Methods

Data

Individual-level data on early deaths from mainland China

We identified information on the characteristics of 48 cases who died from COVID-19 infection in Hubei Province reported by the National Health Commission and the Hubei Province Health Commission website[20,21]. We recorded the following data elements where available: gender, age, date of symptoms onset, date of hospitalisation, and date of death. Of the 48 cases, neither the date of symptom onset nor the date of report was available for 13 cases. We further removed 8 cases with onset before 01/01/2020 or death before 21/01/2020, and 3 deaths after 28/01/2020 which were the dates consistent with reliable reporting of onset and death in this setting, respectively. This left 24 deaths, which we used to estimate the onset-to-death distribution.

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Individual-level data on cases outside mainland China

We collated data on 2,010 cases reported from 37 countries and two administrative regions of China (Hong Kong and Macau) from Government (and/or) Ministry of Health websites and media reports up to 25th February 2020. We recorded the following information where available: country or administrative region in which the case was detected, whether the infection was acquired in China or abroad, date of travel, date of symptom onset, date of hospitalisation, date of confirmation, date of recovery, and date of death. We used data from 169 recovered individuals with reported recovery dates and reported/imputed onset dates to estimate the onset to recovery distribution. We used data on 1,334 international cases to obtain estimates of the CFR.

Data on aggregate cases and deaths in mainland China

Data on 70,117 PCR-confirmed and clinically diagnosed cases by date of onset in Wuhan and elsewhere in China from 1st January to 11th February 2020 were extracted from the WHO Joint Mission Report[8]. Over this time-period a cumulative total of 1,023 deaths were reported across China, with these data available disaggregated into ten-year age bands between 0-9 and 70-79 years old and those above 80 years old[7]. Using collated data on daily reported deaths obtained each day from the National Health Commission regional websites[21], we estimate that 74% of deaths occurred in Wuhan and the remainder outside Wuhan. Additionally, the most recent available cumulative estimates (March 3rd 2020) of 80 304 confirmed cases and 2,946 deaths within China were extracted from COVID-19 WHO Situation Report #43[1].

An earlier pre-print of a subset of these cases up to 26th January 2020 reported the age-distribution of cases categorised by severity for 3,665 cases[22]. Under the China case definition, a severe case is defined as tachypnoea (≧30 breaths/ min) or oxygen saturation ≤93% at rest, or PaO2/FIO2 <300 mmHg[7]. Assuming severe cases to require hospitalisation (as opposed to all of the cases that were hospitalised in China, some of which will have been hospitalised to reduce onward transmission), we used the proportion of severe cases by age in these patients to estimate the proportion of cases and infections requiring hospitalisation.

Data on infection in repatriated international Wuhan residents

Data on infection prevalence in repatriated expatriates returning to their home countries were obtained from Government (and/or) Ministry of Health websites and media reports. To match to the incidence reported in Wuhan on 30th January 2020, we used data from 6 flights that departed between 30th January 2020 and 1st February 2020 inclusive.

Data on cases and deaths on the Diamond Princess cruise ship

In early February 2020 a cruise liner named the Diamond Princess was quarantined after a disembarked passenger tested positive for the virus. Subsequently all 3711 passengers on board were tested over the next month. We extracted data on the ages of passengers onboard on 5th February 2020, the dates of reporting positive tests for 706 PCR-confirmed cases, and date of 7 deaths among these cases from the Japan Ministry of Health, Labour and Welfare reports[23] and international media.

Demography

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Age-stratified population data for 2018 were obtained from the National Bureau of Statistics of the People's Republic of China[24]. According to these data, the population of Wuhan in 2018 was approximately 11 million people.

Statistical Methods

Time intervals between symptom onset and outcome

During a growing epidemic, a higher proportion of the cases will have been infected recently (Figure S1). We accounted for this by re-parameterising a Gamma model to account for exponential growth using a growth rate of 0.14 per day obtained from the early case onset data (see Supplementary Methods). Using Bayesian methods, we fitted a Gamma distributions to data on times from onset-to-death and onset-to-recovery conditional on having observed the final outcome. Missing onset dates were imputed based on dates of report where available.

Estimates of the CFR, IFR and proportion hospitalised from aggregated case data

To estimate the CFR using aggregated data we used our estimates of the distribution of times from onset-to-death to project the expected cumulative number of deaths given the onsets observed in Wuhan and outside Wuhan. We began by assuming that the attack rate is uniform across age-groups (i.e. all ages are equally susceptible). Using the age-distribution of the population, for a given attack rate, we therefore obtained an estimate of the expected infections in each age-group. Under-ascertainment was then estimated inside and outside Wuhan by comparing observed cases by age to this expected distribution assuming perfect ascertainment in the 50-59 age-group. For Wuhan, we added an additional scaling (fitted using a Binomial likelihood) to account for further under-ascertainment compared to outside Wuhan (given the over-stretched health system). These steps gave us the expected age-distribution of cases.

For a given onset-to-death distribution, we then obtained a modelled estimate of the cumulative deaths by age under an age-dependent CFR (fitted relative to the CFR in the oldest age-group, which represented the largest number of deaths). This was compared to the observed deaths by age using a Poisson likelihood. These data were then jointly fitted alongside the most-recent age-aggregated cumulative deaths and cases in mainland China, fitted using a binomial likelihood. This follows from the observation that given the current situation, where both observed cases and deaths have dropped substantially following a peak in late January, the ratio of current cumulative cases, once corrected for under-ascertainment, to current death provide a good estimate of the final CFR[11].

To estimate the IFR we additionally fitted to data on infection prevalence from international Wuhan residents that were repatriated to their home countries. This is formulated as an additional Binomial likelihood, incorporating a translation from incidence to period prevalence accounting for epidemic growth over this period. Our age-stratified CFR and IFR model was then jointly fitted to the case data and infection prevalence data using Bayesian methods. We used our estimates of the onset-to-death distribution obtained from fitting to the 24 deaths in China as a prior distribution. Full mathematical details are given in the Supplementary Information.

The estimates of the proportion of cases that are severe were obtained from a subset of data. Assuming a uniform attack rate by age-groups as before, we use the demography-adjusted under-

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ascertainment rates calculated above to obtain an estimate of the proportion of infections that require hospitalisation.

To independently validate our IFR estimate, we analysed data from the outbreak on the Diamond Princess cruise liner taking the dates of reported positive tests as a proxy for onset date (acknowledging that this could be before the onset of symptoms for some passengers and after onset for others given potential delays in testing and reporting). We fitted a logistic growth curve to the cumulative proportion testing positive on each day weighted by inverse variance (Supplementary Information) and calculated the expected proportion of deaths observed up to 5th March given the onset times and estimated onset-to-death distribution.

Estimates of the case fatality ratio from individual case data

We used parametric (Supplementary Information) and non-parametric methods[11,25] to estimate the CFR in cases reported outside mainland China using individual-level data on dates of onset, date of report and date of outcome (death, recovery or unknown). Cases where the outcome was unknown were treated as censored observations. For 72% of cases, the date of onset was not reported. For the cases with known date of reporting and missing onset date (n=958) we imputed the date of onset from the observed onset-to-report times. Furthermore, 21% of reports of case recoveries mentioned this in aggregate (e.g. x recoveries on day y) and hence could not be linked to a specific case. This was accounted for in the fitting by including an additional parameter to estimate the proportion of recoveries reported. The parametric models were fitted to the data using Bayesian methods (see Supplementary Material). For the non-parametric method we randomly imputed the missing dates of onset and recovery status 100 times.

All analyses were performed using R software (version 3.6.2) with Bayesian Marko-Chain Monte Carlo (MCMC) fitting using the package drjacoby[26]. Data and code are available on https://github.com/mrc-ide/COVID19_CFR_submission.

Results

Figure 2A shows the subset of 24 deaths from COVID-19 that occurred in mainland China early in the epidemic. During a growing epidemic, we are more likely to observe shorter times from onset-to-death because those that occur later will not yet have been reported. Correcting for this bias, we estimate the mean time from onset-to-death to be 18.8 days (95% credible interval, crI 15.7-49.7 days) with a coefficient of variation, CV, of 0.45 days (95% crI 0.29-0.54 days). With the limited number of observations in these data and given that they were from early in the epidemic, we could not exclude many deaths occurring with longer times from onset-to-death (hence the high upper credible interval). However, given that the epidemic in China has since declined, our posterior estimate of the mean time from onset-to-death informed by the analysis of aggregated China data is more precise (mean 17.8 days, 95% crI 16.9-19.2 days, Figure 2).

We similarly estimated the mean time from onset-to-recovery using data on outcomes in 169 cases reported outside mainland China. We obtain a slightly longer duration for the onset-to-recovery distribution of 22.6 days (95% crI 21.1-24.4 days) and CV of 0.33 days (95% crI 0.30-0.37 days) (Figure 2).

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Table 1 shows estimates of the CFR obtained from aggregate data on cases and deaths in mainland China. A large proportion of the cases, including all of those early in the epidemic, were reported from Wuhan where the local health system was quickly overwhelmed. Furthermore, the case definition outside Wuhan required a travel-link to Wuhan. Figure 3A shows a difference in the resulting age-distribution of cases reported from these two areas. Reported cases in Wuhan are more frequent in older age-groups, perhaps reflecting higher severity (and hence prioritisation for hospitalisation in Wuhan) whilst cases outside Wuhan may also represent a bias in terms of the relationship between age and travel. Adjusting for differences in underlying demography and assuming no overall difference in the attack rate by age, we estimate a high level of under-ascertainment of cases in younger age-groups in both Wuhan and outside Wuhan (Figure 3 C-D). Furthermore, we estimate a higher level of under-ascertainment overall in Wuhan compared to outside Wuhan (Figure 3C). Accounting for this under-ascertainment, we estimate the highest CFR in the 80+ age-group of 13.4% (11.2-15.9%) (Figure 3B, Table 1). Our estimates of CFR decline rapidly with decreasing age, with very low rates in young adults and children.

In cases reported outside mainland China, we estimate an overall modal CFR of 2.7% (95% crI 1.4%-4.7%) using the parametric model (Table 2). However, this reflects a balance of cases detected in different ways in the surveillance system. In those that reported travel to mainland China (and hence will have been detected in the surveillance system due to this travel link), we estimate an overall modal CFR of 1.2% (95% crI 0.4%-4.0%). In those without any reported travel to China (therefore detected either through contact tracing or through hospital surveillance) we estimate a slightly higher CFR (although with high overlap in posterior distributions) of 3.6% (95% crI 1.9%-7.2%) using the parametric model. We estimate a lower CFR in those aged under 60 years of age (1.3%, 95% credible interval, crI 0.5%-3.5%) compared to those aged 60 years and over (4.1%, 95% crI 1.8%-11.0%) in this population. Similar estimates were obtained using non-parametric methods (Table 2). Comparing those under and over-60 years of age, we find estimates that are consistent with those observed in cases from mainland China (Tables 1 and 2).

We estimated a prevalence of infection in international Wuhan residents repatriated on 6 flights of 0.87% (6/689, 95% CI 0.32%-1.9%). Adjusting for demography and under-ascertainment, we estimate an IFR of 0.66% (95% crI 0.39-1.33%). As for the CFR, this is strongly age-dependent with estimates rising steeply from age 50 upwards (Table 1). The demography- and under-ascertainment adjusted proportion of infections requiring hospitalisation ranges from 1.1% in the 20-29 age-group up to 18.4% in the 80+ age-group (Table 3). Using these age-stratified IFR estimates, we estimate the IFR in the Diamond Princess population to be 2.9%. Given the delay from onset of symptoms to death, we would expect 56% of these deaths to have occurred by 5th March 2020 giving an estimate of the current IFR of 1.6% compared to the empirical estimate of 1.0% (7/706, 95% CI 0.4-2.0%).

Discussion

Based on extensive analysis of data from different regions of the world, our best estimate at the current time for the CFR of COVID-19 in China is 1.38% (95% crI 1.23%-1.53%). Whilst this remains lower than estimates for other coronaviruses including SARS[27] and MERS[28], it is substantially higher than estimates from the 2009 H1N1 influenza pandemic[29–31]. Our estimate of an IFR of 0.66% in China was informed by PCR-testing of international Wuhan residents returning on repatriation flights. This is consistent with the IFR observed to date in passengers on the Princess Diamond Cruise ship. Our

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estimates of the probability of requiring hospitalisation assume that only severe cases clinically require hospitalisation. This is clearly different from the pattern of hospitalisation that occurred in China, where hospitalisation was also used to ensure case isolation. Mortality can also be expected to vary with the underlying health of specific populations, given that the risks associated with COVID-19 will be heavily influenced by the presence of underlying co-morbidities.

Our estimate of the CFR is substantially lower than the crude CFR obtained from China based on the cases and deaths observed to date, which is currently 3.67%, as well as many of the estimates currently in the literature. The principle reason for this is that the crude estimate does not take into account the severity of cases. Various estimates have been made from patient populations ranging from those with generally milder symptoms (for example international travellers detected through screening of travel history[13,32]) through to those identified in the hospital setting[14,15,33]. We expect higher CFRs in those that are more severely ill. Many case reports note that the presence of other underlying conditions result in poorer prognosis. Although we were unable to adjust for this effect in the absence of detailed individual-level data, this is likely to be correlated with age. However, it should also be noted that the distribution of underlying conditions will vary geographically, and particularly between high-, middle- and low-income settings.

It is clear from the data that has emerged from China that there is a significant increase in the CFR with age. Our results suggest a very low fatality ratio in those under the age of 20. However, as there are very few cases in this age-group, it remains unclear whether this reflects a low risk of death or a difference in susceptibility. Serological testing in this age-group will therefore be critical in the coming weeks to understand the significance of this age-group in driving population transmission. There is a clear increase in the estimated CFR from the age of 50 upwards, with this proportion rising from approximately 1% in the 50-59 age-group to 13% in those aged 80 and above. This increase in severity with age is clearly reflected in case-reports in which the mean age tends to be in the range 50-60 years. Different surveillance systems will pick up a different age-case-mix and we find that those with milder symptoms detected through history of travel are younger on average than those detected through hospital surveillance. Our correction for this surveillance bias therefore allows us to obtain estimates that can be applied to different case-mixes and demographic population structures. However, it should be noted that this correction is applicable under the assumption of a uniform infection attack rate (i.e. exposure) across the population.

Much of the information informing any global estimate of the CFR at the current time is from the early outbreak in Wuhan, China. Given that the health system in this city was quickly over-whelmed, our estimates suggest that there is substantial under-ascertainment of cases in the younger age-groups (who we estimate to have milder disease) in comparison to elsewhere in mainland China. This under-ascertainment is the main factor driving the difference between our estimate of the crude CFR from China (3.67%) and our best estimate of the overall CFR (1.4%). Furthermore, the CFR is likely to be strongly influenced by the availability of healthcare. Whilst in Wuhan this was stretched, our estimates from international cases are of a similar magnitude, suggesting relatively little difference in health outcome. Finally, as clinical knowledge of this new disease accrues, it is possible that outcomes will improve. It will therefore be important to revise these estimates as epidemics unfold.

The world is currently experiencing the early stages of a global pandemic. While China has succeeded in containing spread for two months, this is unlikely to be achievable in most countries. Thus, much of

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the world will experience very large community epidemics of COVID-19 over the coming weeks and months. Our estimates of the underlying IFR of this infection will inform assessments of health impacts likely to be experienced in different countries and thus decisions around appropriate mitigation policies to be adopted.

Author Contributions

NMF and ACG conceived the study with input from ID, LCO, RV, PW and CW. ID, LCO and RV led the analysis of individual-case data for the international cases and estimation of the onset-to-outcome distributions with input from CAD, NMF and ACG. RV, PW, CW and PGTW led the analysis of the China data with input from NMF and ACG. NI coordinated management of the team including the data collation and processing. G C-D and NI undertook the extraction of the international case data. HT undertook the extraction of flight repatriation data with input from NI and AD. HF led the extraction of the China mainland data from national and regional websites with input from HW, YW and XX. JTG developed the code for the non-parametric model. ACG produced the first draft of the manuscript. All authors contributed to the final draft.

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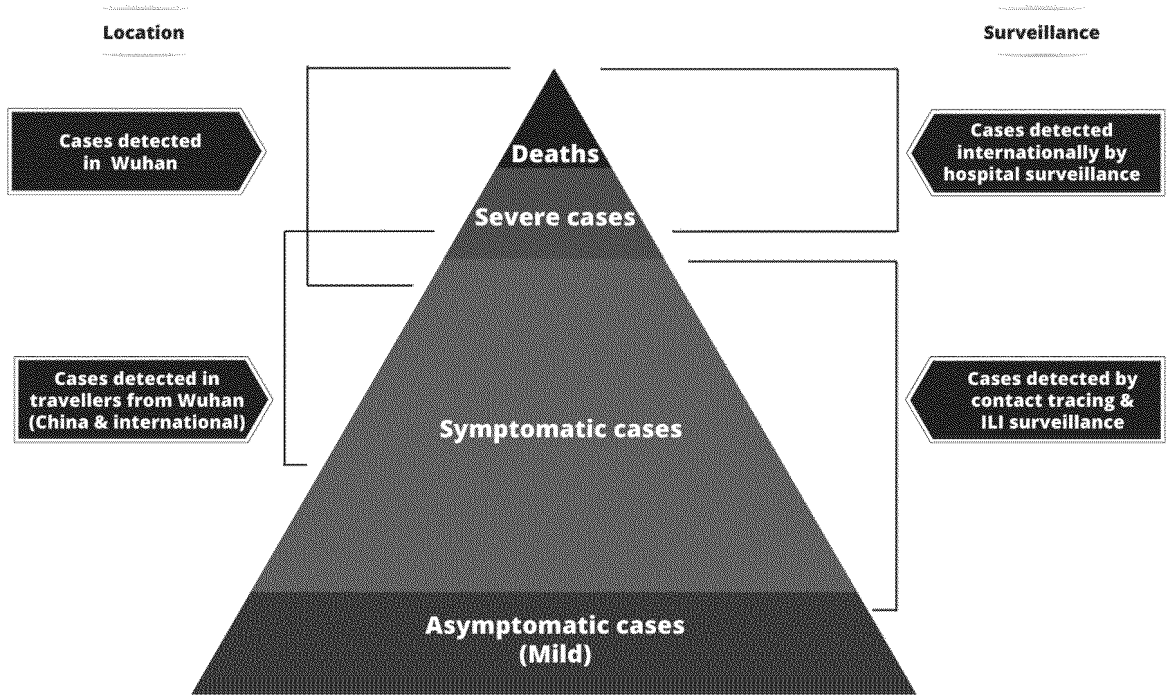

Figure 1: Spectrum of cases for COVID-19. At the top of the pyramid those meeting the WHO case criteria as severe or critical are likely to be identified in the hospital setting presenting with atypical viral pneumonia. These will have been identified in mainland China and amongst those categorised as local transmission internationally. Many more cases are likely to be symptomatic (fever/cough/myalgia) but may not require hospitalisation. These cases will have been identified through links to international travel to high-risk areas and through contact-tracing of contacts of confirmed cases. They may also be identified through population surveillance of, for example, influenza-like illness (ILI). The bottom part of the pyramid represents mild (and possibly asymptomatic) cases. These cases may be identified through contact tracing and subsequently via serological testing.

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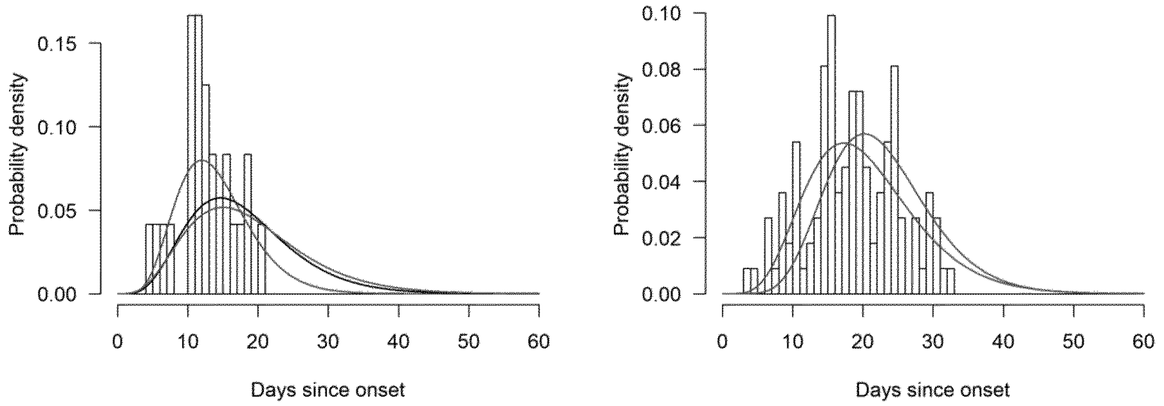

Figure 2: Onset-to-death and onset-to-recovery distributions. (A) Onset-to-death data from 24 cases in mainland China early in the epidemic. (B) Onset-to-recovery data from 169 cases outside mainland China. Red lines show the best fit (posterior mode) Gamma distributions uncorrected for epidemic growth, which are biased towards shorter durations. Blue lines show the same distributions corrected for epidemic growth. The black line on panel (A) shows the posterior estimate of the onset-to-death distribution following fitting to the aggregate case data.

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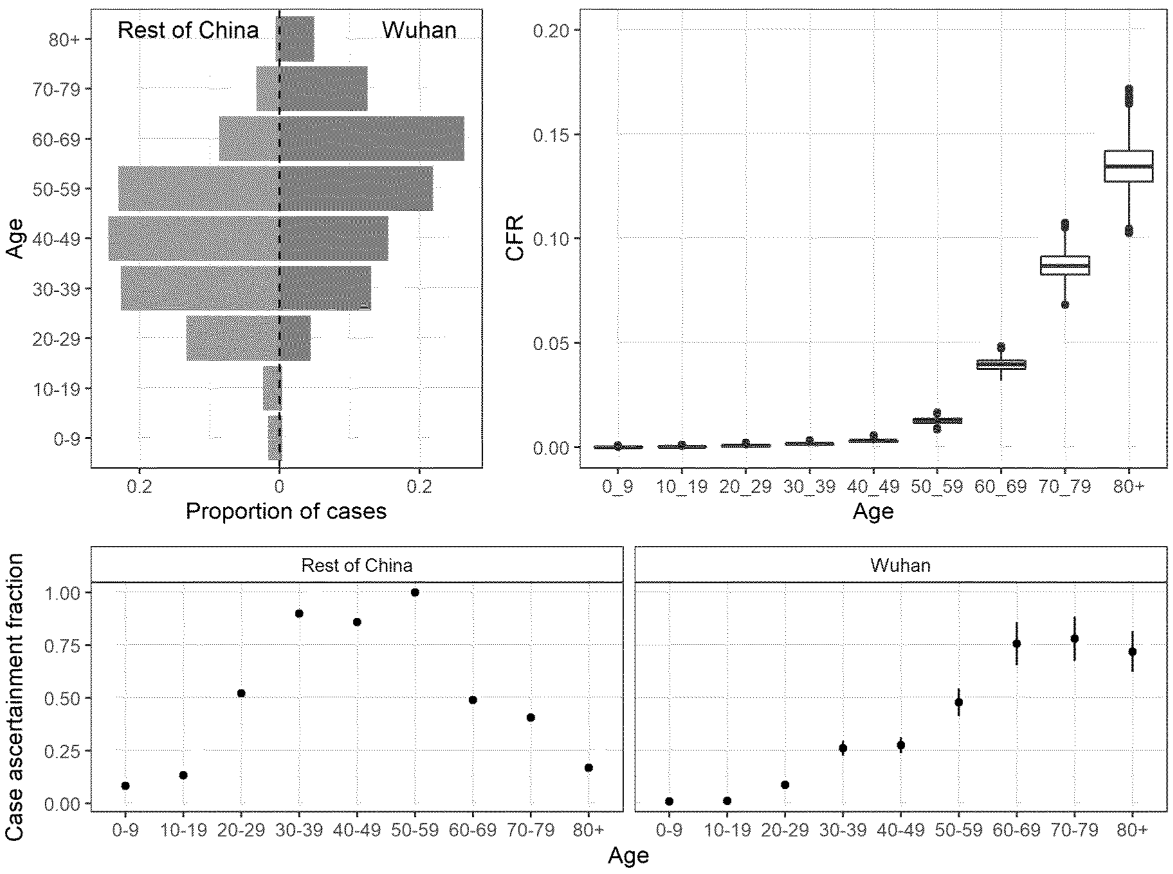

Figure 3 – Estimates of the case fatality ratio (CFR) by age obtained from aggregate data from mainland China. A) The age-distribution of cases in Wuhan and elsewhere in China. B) Estimates of the CFR by age-group adjusted for demography and under-ascertainment. C) and D) Estimated proportion of cases ascertained in Rest of China (C) and in Wuhan (D) relative to the 50-59 age-group elsewhere in China.

Table 1: Estimates of the case fatality ratio (CFR) and infection fatality ratio (IFR) obtained from aggregate time-series of cases occurring in mainland China. Cases and deaths are aggregate numbers reported from 1st January to 11th February 2020[8]. The crude CFR is calculated as deaths/laboratory-confirmed cases. Our estimates also include clinically diagnosed cases (a scaling of 1.31 applied across all age-groups as the breakdown by age was not reported) which gives a larger denominator and hence lower CFR. The clinically-confirmed cases were not reported by age. The adjusted CFR accounts for the underlying demography in Wuhan/elsewhere in China and corrects for under-ascertainment as in Figure 3. The IFR is obtained by combining estimates of the CFR with information on infection prevalence obtained from those returning home on repatriation flights.

	Deaths	Laboratory confirmed cases*	Crude CFR (mean, 95% confidence interval)	CFR adjusting for censoring (posterior mode, 95% credible interval)	CFR additionally adjusted for demography and under-ascertainment (posterior mode, 95% credible interval)	IFR (posterior mode, 95% credible interval)
Overall	1023	44,672	2.29% (2.15,2.43)	3.67% (3.56,3.80)	1.38% (1.23,1.53)	0.657% (0.389,1.33)
Age:						
0 to 9	0	416	0% (0,0.88%)	0.095% (0.011,1.34)	0.0026% (0.0003,0.038)	0.0016% (0.000185,0.0249)
10 to 19	1	549	0.182% (0.004,1.0)	0.352% (0.066,1.74)	0.0148% (0.003,0.076)	0.007% (0.0015,0.050)
20 to 29	7	3,619	0.193% (0.078,0.40)	0.296% (0.158,0.662)	0.06% (0.032,0.132)	0.031% (0.014,0.092)
30 to 39	18	7,600	0.237% (0.14,0.374)	0.348% (0.241,0.577)	0.146% (0.103,0.255)	0.084% (0.041,0.185)
40 to 49	38	8,571	0.44% (0.31,0.61)	0.71% (0.52,0.97)	0.30% (0.22,0.42)	0.16% (0.076,0.32)
50 to 59	130	10,008	1.3% (1.1,1.5)	2.1% (1.7,2.4)	1.3% (1.0,1.6)	0.60% (0.34,1.3)
60 to 69	309	8,583	3.6% (3.2,4.0)	5.8% (5.2,6.3)	4.0% (3.4,4.6)	1.9% (1.1,3.9)
70 to 79	312	3,918	8.0% (7.1,8.9)	12.7% (11.5,13.9)	8.6% (7.5,10.0)	4.3% (2.5,8.4)
80+	208	1,408	14.8% (13.0,16.7)	23.3% (20.3,26.7)	13.4% (11.2,15.9)	7.8% (3.8,13.3)
Age categories:						
Under 60	194	30,763	0.63% (0.55,0.73)	1.0% (0.9,1.2)	0.32% (0.27,0.38)	0.15% (0.09,0.32)
60 and over	829	13,909	5.96% (5.57,6.37)	9.5% (9.1,10.0)	6.4% (5.7,7.2)	3.3% (1.8,6.2)

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Table 2: Estimates of the case fatality ratio (CFR) obtained from individual-level data on cases identified outside mainland China. The parametric estimates are obtained using the Gamma-distributed estimates of onset-to-death and onset-to-recovery shown in Figure. Non-parametric estimates are obtained using a modified Kaplan-Meier method[11,25]. For both sets of estimates, missing onset dates were multiply imputed using information on the onset-to-report distribution. Note that due to missing data on age and travel status, numbers in the stratified analysis are lower than for the overall analysis. In addition, the parametric method requires a correction for the epidemic growth-rate. The parametric estimates were therefore obtained from the subset of data for which the travel/local transmission and age was known. These samples sizes are shown in brackets.

		N	CFR - Parametric	CFR - Non-Parametric
			Posterior Mode (95% Credible Interval)	Maximum likelihood estimate (95% confidence interval)
Overall		1334 (583)	2.7% (1.4%-4.7%)	4.1% (2.1%-7.8%)
Travel versus local transmission				
	Travellers to mainland China	203	1.2% (0.4%-4.0%)	2.4% (0.6%-8.5%)
	Local transmission	380	3.6% (1.9%-7.2%)	3.8% (1.7%-8.2%)
Age				
	Under 60	449 (383)	1.3% (0.5%-3.5%)	1.5% (0.6%-3.9%)
	60 and over	181 (158)	4.1% (1.8%-11.0%)	12.8% (4.1%-33.5%)

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Table 3: Estimates of the proportion of all infections that would be hospitalised obtained from a subset of cases reported in mainland China[22]. We assume that within a UK-context, those that are defined as "severe" would be hospitalised. The rates are adjusted for under-ascertainment and corrected for demography.

Age	Severe Cases	All Cases	Percentage of infections hospitalised (posterior mode, 95% credible interval)
0 to 9	0	13	0% (0.0, 0.0)
10 to 19	1	50	0.04% (0.02, 0.08)
20 to 29	49	437	1.1% (0.62, 2.1)
30 to 39	124	733	3.4% (2.1, 7.0)
40 to 49	154	743	4.3% (2.5, 8.7)
50 to 59	222	790	8.2% (4.9, 16.7)
60 to 69	201	560	11.8% (7.0, 24.0)
70 to 79	133	263	16.6% (9.9, 33.8)
80+	51	76	18.4% (11.0, 37.6)

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Estimates of the severity of COVID-19 disease

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Supplementary Material

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1 Data Sources

1.1 Temporal Incidence Data for Wuhan and Rest of China

Epidemic curves from Figure 2 of the recent Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19) (ref) were digitised and relevant data extracted using the openly available software DataThiefTM: incidence by symptom onset for the period spanning 8th December until 11th February were collated separately for Wuhan and the rest of China. Information on the age-distribution of cases and deaths over the same time period was also extracted from the recent China CDC Weekly Paper (ref) – whilst the deaths were not stratified by location (Wuhan/rest of China), information scraped by volunteers at Imperial College from Chinese provincial Health Commission Reports enabled estimation of the proportion of deaths in China over that time period that had occurred in Wuhan. The observed cases across both locations were then scaled using a number of different adjustments to account for potential underreporting (detailed below). Throughout, we assume all deaths are completely ascertained (i.e. no missed deaths) after the 21st January, and that no detected deaths occurred before that date.

1.2 Individual-Level Data on International Cases

We collated individual line-list data from reports of international cases (see main text). The cases by country are summarised below.

International cases detected outside mainland China			
Country/Administrative Region	Number of confirmed cases	Number of deaths	Number reported to have recovered
Afghanistan	1		0
Australia	22		15
Austria	2		0
Bahrain	17		0
Belgium	1		1
Cambodia	1		1
Canada	10		4
Croatia	1		0
Egypt	1		1
Finland	1		1
France	12	1	11
Germany	16		12
HK SAR	84	2	12
Italy	287	11	1

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India	3		3
Iran	95	15	0
Iraq	5		0
Israel	2		0
Japan	163	1	23
Kuwait	8		0
Lebanon	1		0
Macau SAR	10		7
Malaysia	22		15
Nepal	1		1
Oman	4		0
Philippines	3	1	2
Russia	2		2
Singapore	91		58
South Korea	977	11	19
Spain	5		2
Sri Lanka	1		1
Sweden	1		0
Switzerland	1		0
Taiwan	31	1	2
Thailand	37		22
UAE	13		3
UK	9		8
USA	53		5
Vietnam	16		16

1.3 Prevalence Data from Repatriation Flights

Date on repatriation flights from Wuhan were collated from a number of different sources, including official Ministry of Health reports and media reports. From this data, we considered repatriation flights spanning a three-day period 30th January to 1st February (inclusive) - across these 3 days, a total of 689 individuals were repatriated from Wuhan on flights that tested all individuals (regardless of symptoms) for infection immediately upon arrivals. Testing following this repatriation yielded 6

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positive individuals, a point prevalence of 0.87% - this estimate of point prevalence is then incorporated into the analyses detailed below to help estimate the extent of infection underreporting.

Destination	Date	Number Tested	Number Positive
Japan	30/01/2020	210	2
Japan	31/01/2020	149	2
Denmark	31/01/2020	4	0
France	31/01/2020	180	0
Germany	01/02/2020	115	2
Mongolia	01/02/2020	31	0
Total		**689**	**6**

1.4 Data from Diamond Princess Cruise Ship

We extracted data on the ages of passengers onboard on 5th February, the dates of reporting positive tests for 706 PCR-confirmed cases, and date of 7 deaths. These are shown below.

Date of report	N tested	N positive	References
05/02/2020	31	10	https://www.mhlw.go.jp/stf/newpage_09276.html
07/02/2020	171	41	https://www.mhlw.go.jp/stf/newpage_09340.html
08/02/2020	6	3	https://www.mhlw.go.jp/stf/newpage_09398.html
09/02/2020	57	6	https://www.mhlw.go.jp/stf/newpage_09405.html
10/02/2020	103	65	https://www.mhlw.go.jp/stf/newpage_09419.html
13/02/2020	221	44	https://www.mhlw.go.jp/stf/newpage_09425.html
13/02/2020	217	67	https://www.mhlw.go.jp/stf/newpage_09542.html
16/02/2020	289	70	https://www.mhlw.go.jp/stf/newpage_09547.html
17/02/2020	504	99	https://www.mhlw.go.jp/stf/newpage_09568.html
18/02/2020	681	88	https://www.mhlw.go.jp/stf/newpage_09606.html
19/02/2020	607	79	https://www.mhlw.go.jp/stf/newpage_09640.html
20/02/2020	52	13	https://www.mhlw.go.jp/stf/newpage_09668.html
23/02/2020	831	57	https://www.mhlw.go.jp/stf/newpage_09708.html
26/02/2020	167	14	https://www.mhlw.go.jp/stf/newpage_09783.html
02/03/2020	3	1	https://www.mhlw.go.jp/stf/newpage_09881.html
02/03/2020	63	0	https://www.mhlw.go.jp/stf/newpage_09881.html

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TOTALS	**706**	**4003**

We additionally use the age-distribution of the cases to estimate the IFR. These were available for 531 of the 706 cases; we assumed the age distribution in the remaining cases was the same. These are shown in the table below.

Age group (years)	Number of passengers	Number testing positive
0-9	16	1
10-19	23	2
20-29	347	20
30-39	429	23
40-49	333	25
50-59	398	49
60-69	924	129
70-79	1015	228
80-89	215	52
90-99	11	2
Total	**3711**	**531**

2 Statistical Methods

2.1 Intervals between onset of symptoms and death

Let t_o and t_d be the time (in days) of onset of symptoms and death, respectively, and let $\delta_o = t_d - t_o$ be the onset-to-death interval. If $f_o(\cdot)$ denotes the probability density function (PDF) of time from symptom onset to death, then the probability that a death on day t_d had onset of symptoms on day t_o is

$$g_o(t_o \mid t_d) = \frac{\int_{\delta_o}^{\delta_o+1} f_o(\tau) o(t_d - \tau)\, d\tau}{\int_0^\infty f_o(\tau') o(t_d - \tau') d\tau'},$$

where $o(t)$ denotes the observed number of onsets that occurred at time t. For an exponentially growing epidemic, we assume that $o(t) = o_0 e^{rt}$ where o_0 is the initial number of onsets (at $t = 0$) and r is the epidemic growth rate. Substituting this, we obtain

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$$g_{od}(\delta_{od} \mid t_d) = \frac{\int_{\delta_{od}}^{\delta_{od}+1} f_{od}(\tau) e^{-r\tau}\, d\tau}{\int_0^{\infty} f_{od}(\tau') e^{-r\tau'}\, d\tau'} .$$

We can use this formula to fit the distribution $g_{od}(\cdot)$ to the observed data, correcting for the epidemic growth at rate r to estimate parameters of the true onset-to-death distribution $f_{od}(\cdot)$.

If we additionally assume that onsets were poorly observed prior to time $T_{\min}$ then we can include censoring:

$$g_{od}(\delta_{od} \mid t_d) = \frac{\int_{\delta_{od}}^{\delta_{od}+1} f_{od}(\tau) e^{-r\tau}\, d\tau}{\int_0^{t_d - T_{\min}} f_{od}(\tau') e^{-r\tau'}\, d\tau'} .$$

For the special case that we model $f_{od}(\cdot)$ as a gamma distribution parameterised in terms of its mean m_{od} and coefficient of variation s_{od} (defined as the ratio of the standard deviation to the mean), namely $f_{od}(\cdot \mid m_{od}, s_{od})$, it can be shown that

$$g_{od}(\delta_{od} \mid t_d, \hat{m}_{od}, \hat{s}_{od}) = \frac{\int_{\delta_{od}}^{\delta_{od}+1} f_{od}(\tau \mid m/(1 + r m_{od} s_{od}^2), s)\, d\tau}{\int_0^{t_d - T_{\min}} f_{od}(\tau' \mid m/(1 + r m_{od} s_{od}^2), s)\, d\tau'} ,$$

where the transformed mean and standard deviation-to-mean ratios are $\hat{m}_{od} = \frac{m_{od}}{(1 + r m_{od} s_{od}^2)}, \hat{s}_{od} = s_{od}$.

The Bayesian posterior distribution for m_{od} and s_{od} is proportional to the product of this likelihood over a dataset of observed intervals and times of death $\{t_o, t_d\}$:

$$\Pr(m_{od}, s_{od} \mid \{t_o, t_d\}) \propto \prod_i g_{od}(\delta_{od,i} \mid t_{d,i}, \hat{m}_{od}, \hat{s}_{od}) \Pr(m_{od}, s_{od})$$

Here $\Pr(m_{od}, s_{od})$ is the joint prior distribution over m_{od} and s_{od}. We assume a $\mathrm{Uniform}(10{,}100)$ prior on m_{od} and a $\mathrm{Uniform}(0.2{,}0.8)$ prior on s_{od}, along with a fixed growth rate of $r = 0.14$. We obtained the full posterior distributions of m_{od} and s_{od} by computing the joint distribution over a grid in increments of 0.05 and 0.005 respectively. We truncated the distribution by setting the likelihood to zero for combinations of m_{od} and s_{od} that generated gamma distributions with 95th percentile >100 days.

2.2 Intervals between onset of symptoms and recovery

Similar to the onset-to-death analysis above, we inferred the onset-to-recovery distribution $f_{or}(\cdot \mid m_{or}, s_{or})$ by fitting to data on the interval $\delta_{or} = t_r - t_o$ between onset of symptoms (t_o) and discharge from hospital (t_r). As above, we assumed a gamma distribution for $f_{or}(\cdot)$ resulting in an analytical expression for the epidemic-adjusted distribution $g_{or}(\cdot)$:

$$g_{or}(\delta_{or} \mid t_r, \hat{m}_{or}, \hat{s}_{or}) = \frac{\int_{\delta_{or}}^{\delta_{or}+1} f_{or}(\tau \mid m/(1 + r m_{or} s_{or}^2), s)\, d\tau}{\int_0^{t_r - T_{\min}} f_{or}(\tau' \mid m/(1 + r m_{or} s_{or}^2), s)\, d\tau'} ,$$

where $\hat{m}_{or} = \frac{m_{or}}{(1 + r m_{or} s_{or}^2)}, \hat{s}_{or} = s_{or}$

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We used a lower growth rate of $r = 0.05$ for cases in travellers who had been infected in China, where the increase in case numbers had slowed and onsets were earlier. We assumed $r = 0.14$ in locally-acquired cases.

An added complication to this analysis was that many samples had missing onset dates. For samples with missing onset dates we assumed that symptom onset occurred prior to report date, i.e. $t_o = t_p - \varepsilon$, where t_p was the date of report (present in all cases) and ε was a free parameter. This resulted in an additional set of parameters $\varepsilon_1, \ldots, \varepsilon_n$, where n is the number of cases with missing onset data. Note that when onset data are present, $\delta_{op} = t_p - t_o$ represents observed data, but when onset data are not present this reduces to $\delta_{op} = \varepsilon$. Assuming a gamma distribution for the onset-to-report distribution $f_{op}(\cdot \mid m_{op}, s_{op})$ we obtain

$$g_{op}(\delta_{op} \mid t_p, \hat{m}_{op}, \hat{s}_{op}) = \frac{\int_{\delta_{op}}^{\delta_{op}+1} f_{op}(\tau \mid m/(1+rm_{op} s_{op}^2), s)\, d\tau}{\int_0^{t_p - T_{\min}} f_{op}(\tau' \mid m/(1+rm_{op} s_{op}^2), s)\, d\tau'},$$

where $\hat{m}_{op} = \frac{m_{op}}{(1+rm_{op} s_{op}^2)}, \hat{s}_{op} = s_{op}$.

This likelihoods from the two parts of this analysis were combined and multiplied by the prior to obtain

$$\Pr(m_{or}, s_{or}, m_{op}, s_{op}, \varepsilon_1, \ldots, \varepsilon_n \mid \{t_o, t_p, t_r\}) \propto \prod_i g_{or}(t_{o,i} \mid t_{r,i}, \hat{m}_{or}, \hat{s}_{or})\, g_{op}(t_{o,i} \mid t_{p,i}, \hat{m}_{op}, \hat{s}_{op}, \varepsilon_1, \ldots, \varepsilon_n) \times \Pr(m_{or}, s_{or}, m_{op}, s_{op}, \varepsilon_1, \ldots, \varepsilon_n).$$

We assumed $\mathrm{Uniform}(10,100)$ priors on m_{or} and m_{op}, and $\mathrm{Uniform}(0.2,0.8)$ priors on s_{or} and s_{op}. We also assumed $\mathrm{Uniform}(0,50)$ priors on all ε parameters, which were treated as nuisance parameters when summarising other parameters. Due to the high dimensionality of this problem, parameters were estimated via MCMC in the R package drjacoby v1.0[1].

2.3 Epidemic growth-rate adjustment

The figure below illustrates the requirement for the adjustment for epidemic growth for these onset-to-outcome distributions. We simulated a growing epidemic up to day 60 (number of cases on day 1 = 2, growth rate=0.14, doubling time 5 days). The simulated onset-to-outcome distribution if everyone had been followed up until their outcome was observed is shown by the black bars whilst the onset-to-outcome distribution observed at day 60, censoring those whose outcome is not yet observed is shown by the red bars. The uncorrected Gamma distribution fitted to the observed outcome times at day 60 is shown in red and the Gamma distribution fitted to the observed outcome times at day 60, corrected for epidemic growth, is shown in blue. The latter recovers the true distribution whilst the uncorrected fit results in distribution that is biased towards shorter durations.

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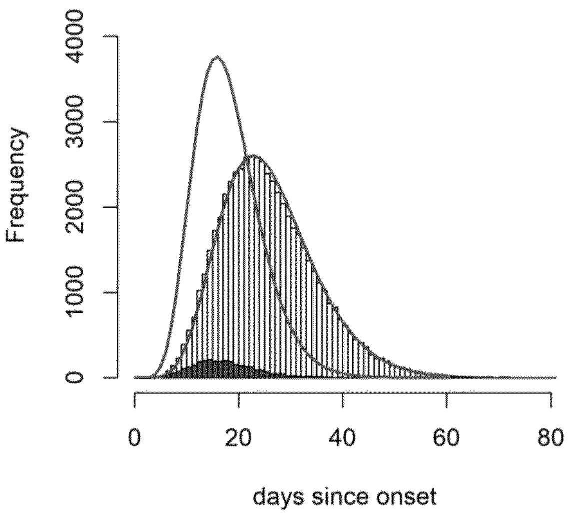

2.4 Age-stratified estimates of the Case Fatality Ratio and Infection Fatality Ratio from aggregate case data

2.4.1 Demographic adjustment

Assuming homogeneous attack rates across the different age groups, the demographic distribution of cases by age across each location should broadly match the demography of the populations in Wuhan and across the rest of China. The reported age-distribution of cases for both locations show striking deviations from the demographic structure of the Chinese populations. Wuhan, in particular, has noticeably fewer cases in younger age groups, and significant overrepresentation of older age-groups (see Figure 1B in main text). Similar patterns are evident in the age-distribution of cases outside China, but to a lesser extent. We hypothesised that these disparities were a product of under-ascertainment of cases, particularly in younger age-groups where a smaller proportion of infections would be expected to be severe and require hospitalisation.

In order to account for these disparities, we adjust the observed cases across both locations (inside Wuhan and outside Wuhan) to produce age-distributions of cases that matches China's demography. For each age-group and location, we calculate the following:

$$N_{i,j} = \frac{Population_{i,j}}{Cases_{i,j}}$$

where i indexes each age-group and j indexes by location, and therefore $Population_{i,j}$ and $Cases_{i,j}$ describe the population and number of cases in age-group i and location j respectively. The reciprocal of $N_{i,j}$ is therefore the attack-rate, which describes the number of cases per unit population.

This factor is then used to scale observed cases in the following way. For cases Outside Wuhan, we assume complete ascertainment in the age-group where the attack rate (highest valued reciprocal of $N_{i,j}$) is highest – that of the 50-59 year olds. We then adjust cases in the other age-groups to produce identical attack rates, so that for Outside Wuhan:

$$AdjustedCases_{i,OutsideWuhan} = Cases_{i,OutsideWuhan} \max\left(\frac{1}{N_{i,OutsideWuhan}}\right) N_{i,OutsideWuhan}$$

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We assume an additional level of under-ascertainment in Wuhan occurring due to the extensive strain on the health system, and so further scale the number of cases after the initial demographic adjustment above, such that

$$A \quad d \quad jC \quad ua_{i,W} ss_{na} \; te_n \; C\,es \; a_{i,W}d \; s_{na} \; N_n e_{i,W} Cs_{na} \; z_n$$

where z is a fitted parameter that is smaller than $\max(\frac{1}{N_{i,j}C})$, implying that more cases are missed inside Wuhan than in the rest of the country.

We checked the sensitivity of our results to the assumption that there was under-ascertainment outside Wuhan. Under the alternative assumption that cases outside Wuhan are completely ascertained (and hence that the age-distribution observed reflects cases arising only from exposure in Wuhan) we obtained similar estimates (overall CFR 1.87% compared to 1.67% under our baseline assumption).

2.4.2 Statistical modelling framework

We worked within a Bayesian framework in order to jointly estimate the age-stratified case-fatality ratio, the onset-to-death distribution and the true underlying number of cases within Wuhan and other areas of mainland China, incorporating our prior knowledge of the onset-to-death distribution from fitting to observed data from 24 cases from mainland China (see Section2.1) .

Given our case and death age-stratification $A = \{a \in 1{:}9; 1 = 0 - 9\,y\;\; rs\,o\;\; a2 = 10 - 19, \ldots 9 = 80 +\}$ we define the following parameters: the associated set of case-fatality rates θ_A, mean m_{od} and standard deviation to mean ratio s_{od} of the onset-to-death distribution $f_{od}(\cdot | m_{od}, s_{od})$. Observed cases are adjusted assuming homogeneous attack rates across age groups and a demographic age-distribution representative of China, assuming perfect case ascertainment in the 50-59 year old age group outside of Wuhan where there were the highest levels of case reporting relative to population size (see above). We also adjust for an additional level of underreporting specific to Wuhan (relative to elsewhere in China), z.

To fit these parameters we used the following data: D_W, the total observed deaths in Wuhan to 11th February 2020; D_A, the total observed deaths by age up to 11th February 2020, including those in Wuhan and $C_{T,A,L}$, observed cases by day, age and location up to this date. We also incorporated data on the total deaths and cases observed within mainland China by 4th March 2020 (without disaggregation by age or location), D_{M4} and C_{M4}.

$$\Pr(r_A, m_{od}, s_{od}, z, \varphi, r, D | D_{M4}, C_{M4}, D_W, D_A, C_{T,A,L}, A_P, A_N) \propto L_1\, L_2\, L_3 \Pr(\theta_A)\Pr(m_{od})\Pr(s_{od})\Pr(z)$$

where

$$L_1 = \Pr(D_{M4} | C_c, \theta_A, C'_{T,A,L}, m_{od}, s_{od})$$

$$L_2 = \Pr(D_W, D_A | \theta_A, C'_{T,A,L}, m_{od}, s_{od})$$

$$L_3 = \Pr(C'_{T,A,L}, I_{T,A,L} | C_{T,A,L}, A_P, A_N, \omega, \varphi, r, D).$$

Here term L_1 represents the likelihood of the most recently observed crude case-fatality ratio (deaths/cases) in mainland China. The crude case fatality ratio tends to the true case fatality ratio as

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the proportion of the full epidemic which has been observed increases[2] and after adjustment for under ascertainment of cases. Cases in China have now reduced substantially relative to their late January 2020 peak. As such, this suggests that the recently estimated crude CFR likely represents a good approximation of the final epidemic CFR. Term L_2 represents the likelihood of the observed number of deaths in Wuhan (aggregated across age groups), and also, the observed number of deaths by age across all settings accounting for case-fatality rates by age, the epidemic curve adjusted for differences in ascertainment rates (by age and location) of cases and the distribution between case-onset and death. Term L_3 represents the model of how observed cases can be adjusted to reflect true cases, denoted $C'_{T,A,L}$, accounting for surveillance capacity in Wuhan, z, and age-based disparities in ascertainment throughout the course of the large-scale epidemic.

2.4.3 Estimation of infection rates from flight repatriation data

We also estimate infections, $I_{T,A,L}$ from true cases accounting for further under-ascertainment present across both locations. We inform this under-ascertainment of all infections using the observed prevalence of infections in travellers (n = 689) repatriated from Wuhan over the time period spanning 30th January – 1st February 2020 (inclusive). We estimate the prevalence of infection in Wuhan on 31st January by:

$$\text{Prevalence}_{T,W} = \frac{\frac{\varphi C'_{T,W}}{P_W}\left(1 - e^{-r}\right)^{D}}{r}$$

where φ is an additional scaling factor for all infections, $C'_{T,W}$ is the estimated incidence of cases on 31st January in Wuhan (after the other age-based and Wuhan specific scalings detailed above), P_W is the population of Wuhan (assumed to be 11,081,000 people), r is the epidemic growth rate (assumed r = 0.14) and D is the detection window (duration that an infection remains detectable). We assume Uniform priors on r of [0,0.1] and D of [7,14].

The remaining terms represent priors which were all uninformative with the exception of the onset-to-death parameters which were set to the likelihood surfaces estimated from the subset of observed onset to death durations.

2.4.4 Capturing age-stratified case-fatality ratios

Setting $T = 11^{th}$ of February 2020, the probability a case in age-category a with onset date t has died by time T is:

$$\lambda(a, t|\theta_a, m_{od}, s_{od}) = \theta_a \int_{t}^{T-t} f_{\text{od}}(\tau \mid m_{od}, s_{od})\, d\tau$$

Assuming we observe $C'_{T,A,L}$, the true number of cases by day and age across all locations from the beginning of the epidemic $t_0 = 2^{nd}$ December (the date our data starts from), the expected number of deaths in age-category a is then:

$$E(D_a) = \sum_{t=t_0}^{T} \sum_{L} C'_{t,a,l}\, \lambda(a, t)\,.$$

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We assume that observed deaths D_a follow a Poisson distribution with rate equal to the expectation $E(D_a)$:

$$\Pr(D_a | E(D_a)) = \frac{E(D_a)^{D_a} e^{-E(D_a)}}{D_a!}.$$

The likelihood of observing the full set of age-specific death-counts observed at T is then:

$$\Pr(D_A | \theta_A, C'_{T,A,L}, m_{od}, s_{od}) = \prod_{a \in A} \Pr(D_a \mid E(D_a)).$$

Simultaneously, the expected proportion of cases in Wuhan, π_w, can be assumed to follow a Binomial distribution (where $X \sim Bin(N, p)$ is the binomial distribution with X observations from N trials with probability p):

$$E(\pi_w) = \frac{\sum_{t=t_0}^{T} \sum_A C'_{t,a,w} \lambda(a,t)}{\sum_{t=t_0}^{T} \sum_A \sum_L C'_{t,a,l} \lambda(a,t)}, \ \Pr(D_w | \theta_A, C'_{T,A,L}, m_{od}, s_{od}) \sim Bin\left(\sum_A D_a, E(\pi_w)\right)$$

As we assume the age-distribution and location of deaths are independent of one another:

$$\Pr(D_w, D_A | \theta_A, C'_{T,A,L}, m_{od}, s_{od}) = \Pr(D_w)\Pr(D_A).$$

2.4.5 Capturing post-peak overall case-fatality ratio

Given the total number of expected deaths across all-ages according to our age-stratified case-fatality ratios the overall number of expected deaths across all ages in China by T is:

$$E(D_{M4}) = \sum_{a \in A} \sum_{t=t_0}^{T} \sum_L C'_{t,a} \lambda(a,t).$$

As cases in mainland China have been remained substantially lower than their late January 2020 peak since mid-February, current CFR estimates unadjusted by onset-to-death (i.e. true deaths to date divided by true cases to date) are likely to be a good estimator of the underlying CFR[2]. To capture this information, accounting for our estimates of the underlying surveillance capacity to capture all cases throughout the epidemic, we therefore assume that the current crude CFR in mainland China (i.e. current total deaths as a proportion of the current total observed cases) is a good estimate of the expected deaths arising from cases up to time T in China as a proportion of the unadjusted observed cases in this time period:

$$P(D_{M4} | C_{M4}, \theta_A, C'_{T,A,L}) \sim Bin\left(C_{M4}, \frac{E(D_T)}{C_T}\right),$$

where C_T is the total observed cases in China prior to time T (which is 11th February 2020).

2.5 Estimates of the Case Fatality Ratio from individual case data

Continuing our notation from section 2.1, let t_o, t_r and t_d denote the times of onset, recovery and death respectively, and let δ_{or} and δ_{od} denote onset-to-recovery and onset-to-death intervals. Additionally, let c denote the case-fatality ratio (CFR) such that each case has a probability c of ultimately resulting in death and a probability $(1 - c)$ of ultimately resulting in recovery. We also allow for imperfect identification of recoveries, such that each recovery has a probability p_r of being detected, and a probability $(1 - p_r)$ of remaining in the data for an unlimited time as an un-coded or "other" event.

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The probability that a patient dies on day t_d given onset at time t_o is given by:

$$\Pr(\text{outcome} = \text{death}, t_d \mid t_o, m_{od}, s_{od}, c) = c \int_{\delta_o}^{\delta_o+1} f_{od}(t_d + \tau \mid m_{od}, s_{od})\, d\tau .$$

Similarly, the probability that a patient is detected as a recovery on day t_r, given onset at time t_o, or alternatively recovers but this recovery event is missed, is given by:

$$\Pr(\text{outcome} = \text{recovery}, t_r \mid t_o, m_{or}, s_{or}, c, p_r) = p_r(1-c) \int_{\delta_o}^{\delta_o+1} f_{or}(t_r + \tau \mid m_{or}, s_{or})\, d\tau .$$

Finally, the probability that a patient remains in hospital at the last date for which data are available, T, is

$$\Pr(\text{outcome} = \text{other} \mid t_o, m_{od}, s_{od}, m_{or}, s_{or}, c, p_r) = c \int_{T-t_o}^{\infty} f_{od}(\tau \mid m_{od}, s_{od})\, d\tau +$$
$$p_r(1-c) \int_{T-t_o}^{\infty} f_{or}(\tau \mid m_{or}, s_{or})\, d\tau +$$
$$(1-p_r)(1-c) .$$

The overall likelihood given all observed outcomes ($\text{outcome}_i \in \{\text{death}, \text{recovery}, \text{other}\}$) and corresponding outcome times (t_i) is simply the product over the individual terms:

$$\Pr(\{\text{outcome}_i, t_i\} \mid t_{o,i}, m_{od}, s_{od}, m_{or}, s_{or}, c, p_r)$$
$$= \prod_i \Pr(\text{outcome}_i, t_i \mid t_{o,i}, m_{od}, s_{od}, m_{or}, s_{or}, c, p_r) .$$

In a Bayesian context, the posterior distribution is obtained by multiplying this likelihood by the priors:

$$\Pr(m_{od}, s_{od}, m_{or}, s_{or}, c, p_r \mid \{\text{outcome}_i, t_{o,i}, t_i\})$$
$$\propto \Pr(\{\text{outcome}_i, t_i\} \mid t_{o,i}, m_{od}, s_{od}, m_{or}, s_{or}, c, p_r) \times$$
$$\Pr(m_{od}, s_{od}) \Pr(m_{or}, s_{or}) \Pr(c) \Pr(p_r)$$

Here we have assumed that the joint prior can be decomposed into separate marginal priors on onset-to-death parameters, onset-to-recovery parameters, and separate priors on c and p_r. For the first two priors $\Pr(m_{od}, s_{od})$ and $\Pr(m_{or}, s_{or})$ we pass in the posterior distributions from the analyses above, namely the posterior m_{od} and s_{od} from the analysis in section 2.1, and the posterior m_{or} and s_{or} from the analysis in section 2.4.

2.6 Estimating the infection fatality ratio for the Diamond Princess data

We estimated the proportion of deaths amongst the passengers testing positive on the Diamond Princess that had occurred $\pi_D(T)$ where T was the last date for which data are available (5th March 2020), given the probability density function (PDF) of time from symptom onset to death $f_{OD}(\tau)$:

$$E(\pi_D(T)) = \sum_{i=1}^{N} \left(\int_{\tau=0}^{T-t_{0,i}} f_{OD}(\tau \mid m_{od}, s_{od})\, d\tau \right) / N$$

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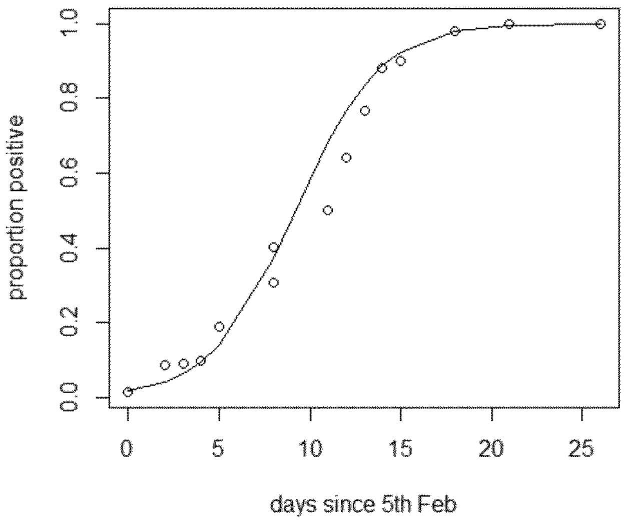
where $\{t_{0,i}; 1..N\}$ are the set of time of onset in each of the N total number of test-positive individuals and $\bar{m}_o$ and $\bar{s}_o$ are the posterior mode of the mean and ratio of standard deviation to mean of onset duration distribution obtained from our fitting of these distributions to data from mainland China.

The figure below shows the proportion first testing positive on each date according to Ministry of Health reports, and the fitted logistic growth curve (log odds[proportion positive] = a +b*days, where a=-3.98, b=0.43 and days=days since the first positive test on 5th February up to tests on 2nd March). Initially only symptomatic individuals were tested whilst later testing was extended to all passengers.



3 References

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2 Ghani AC, Donnelly CA, Cox DR, *et al.* Methods for estimating the case fatality ratio for a novel, emerging infectious disease. *Am J Epidemiol* 2005; **162**: 479–86.

To: Carter
Cc: Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva
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From: Dr. Eva K
Sent: Wed 3/18/2020 12:42:08 PM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March
2020 0301 CommunityScreening+Covid-19Testingv3.pdf

Some update on screening and testing -
1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.

2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:

> Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of

care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPORTED BY SENTINEL PROVID											
YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	NUM. OF PROVIDERS	% UNWEIGHT ILI
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	2,907	1.50434
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	2,938	1.60062
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	2,962	1.74176
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	2,992	1.86264
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	3,003	2.01412
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	3,018	2.36006

2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	2,986	2.62939
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	2,981	2.9516
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	2,990	3.42406
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	2,986	3.29862
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	2,947	3.86227
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	2,917	5.02905
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	2,906	7.14443
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	2,949	6.22886
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	2,976	5.08047
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	2,967	5.37322
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	2,966	6.02641
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	2,956	6.89746
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	2,960	7.09968
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	2,916	6.22684

2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	2,914	5.62976
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	2,826	5.12485
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	2,625	5.3537

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)
Sent: Wednesday, March 18, 2020 11:27 AM
To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

“Skate to where the puck~~is going~~ has already gone. “

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher
Sent: Tuesday, March 17, 2020 7:42 PM
To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD

<adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deat
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	

27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	1
1-Mar	130	2	84		1,694	34	73	1
2-Mar	191	3	120		2,036	52	99	6
3-Mar	212	4	151		2,502	79	103	6
4-Mar	285	4	202		3,089	107	154	11
5-Mar	423	7	248	1	3,858	148	197	12
6-Mar	613	9	517	10	4,636	197	309	15
7-Mar	949	16	613	17	5,833	233	434	19
8-Mar	1,126	19	848	25	7,375	366	544	22
9-Mar	1,412	30	1,231	30	9,172	463	728	27
10-Mar	1,784	33	1,646	35	10,149	631	1,010	31
11-Mar	2,281	49	2,277	55	12,462	827	1,311	38

12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	40
13-Mar	3,661	79						48
14-Mar	4,499	91						58
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	69
16-Mar	6,633	148						87
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*	*104*

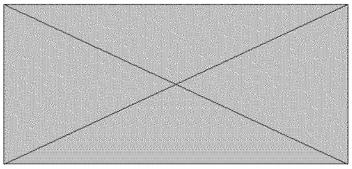
Sent from Mail for Windows 10

From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.



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Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

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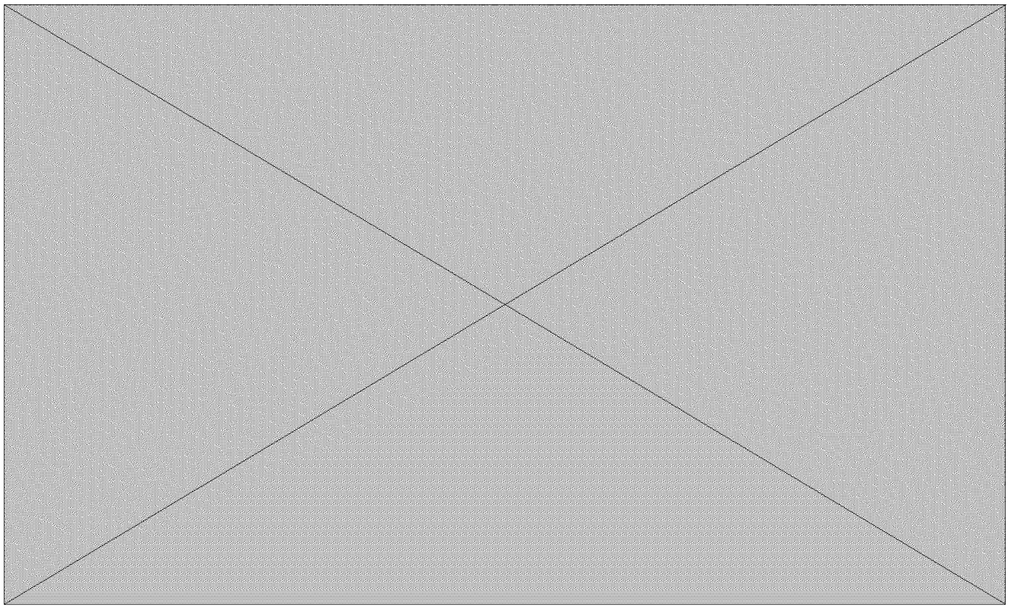

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ____________

Cell: ____________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson Carter Mecher Dr. Eva Lee <eva.evalee. Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb <bg.richard William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips,

Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

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From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D.

<MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:

Fax:

Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/

rdarling@patronusmedical.com

https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

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From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher
Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Tracey

McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1
HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson
Brian Benson
Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters,

William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

---

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee <eva.evalee.lee64@gmail.com>; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips,

Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson MothersheadtJerry L. <1974USNA@gmail.com>; Brian Benson
Dr. Eva K Lee

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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FOUO

Community Screening and Diagnostic Testing for COVID-19 Biosurveillance

Eva K Lee, Ph.D.
Director and Professor, Center for Operations Research in Medicine and HealthCare
Distinguished Scholar in Health Systems, Health System Institute
Georgia Tech and Emory University School of Medicine

evalee-gatech@pm.me

Feb 28, 2020

EK Lee, evalee-gatech@pm.me, Copyright materials 2020

Rapid Screening and Testing

FOUO

Screening and testing are essentials for disease contentment and mitigation

- **Screening:** Rapid screening helps to identify at-risk individual, surveil community, and determine disease prevalence.
- **Testing individuals for covid-19:** are critical to confirm and determine the scope of spread of covid-19 within the community.
- Tracking and contact-tracing should be performed simultaneously during these procedures.
- CDC guidelines
  - "Screening" refers to "epidemiologic risk assessment" described here and informed by "documented COVID-19 infections in a jurisdiction and known community transmission".
  - "Testing" refers to "initial diagnostic testing" defined here.

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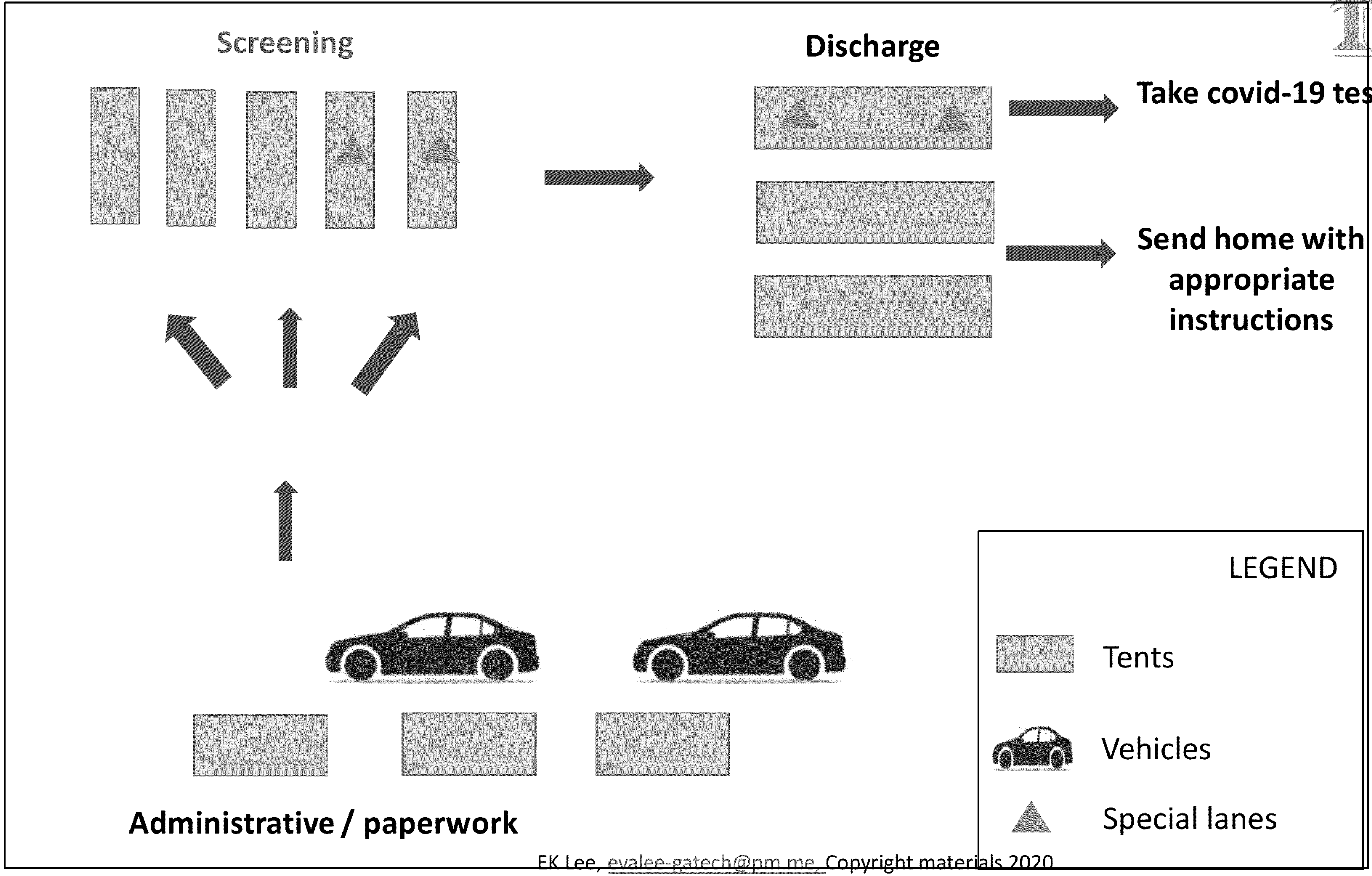
Screening Tents (“epidemiologic risk assessment”)

- **Locations**
  - Ubiquitous so citizens can go easily: Grocery store parking lots, Walmart, Target, Walgreens, etc ?
  - Near covid-19 test sites: pharmacies, hospitals, more manageable when PPE is used, and if sending high-risk cases directly to testing sites.
- **Key Steps**
  - **Administrative/paperwork:** register, paperwork
  - **Screening:** based on age, symptoms, health conditions (co-existing conditions) and other criteria
  - **Discharge:**
    - provide appropriate risk level and guidance on action
    - If needed, send for covid-19 test
- **Please exercise appropriate social distancing**

Drive-Through screening (“epidemiologic risk assessment”)

FOUO



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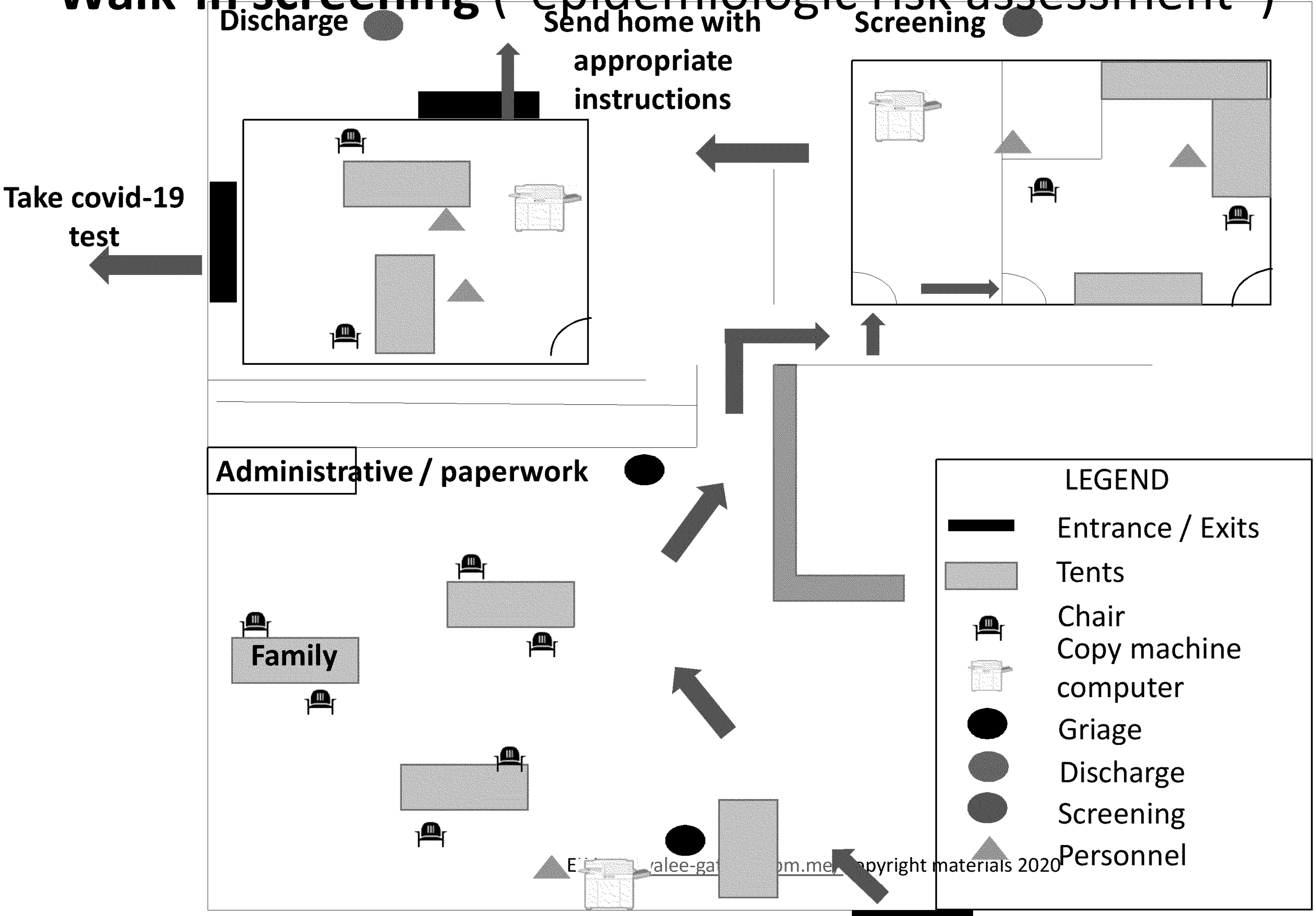
Walk-in screening (“epidemiologic risk assessment”)

FOUO



Note: Design is to ensure sufficient social distancing

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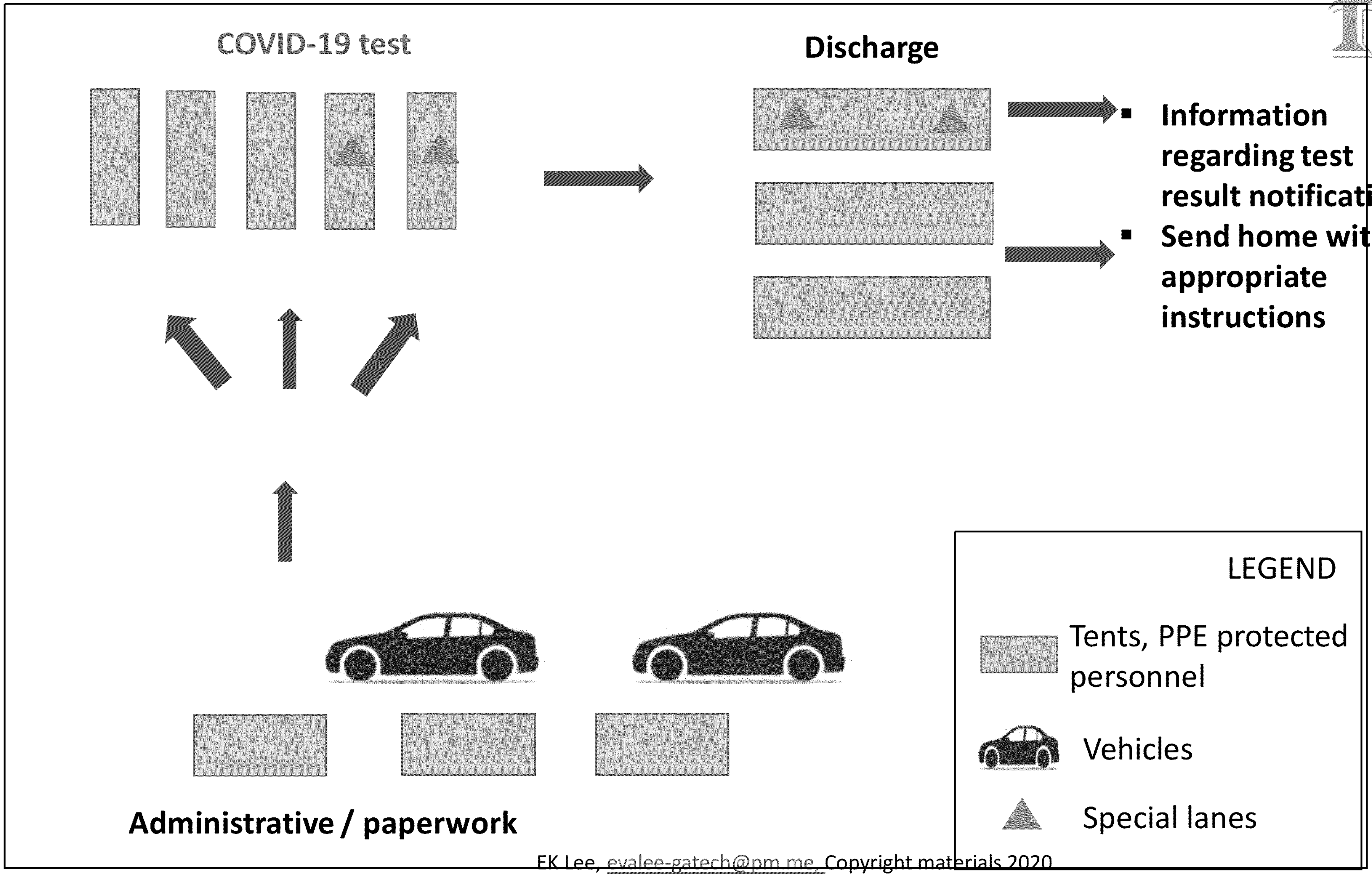
COVID-19 Testing Tents (initial diagnostic testing)

- **Locations**
  - Next to hospitals: more manageable for PPE usage
  - Pharmacies: Ubiquitous
- **Key Steps**
  - **Workers:** must wear PPE for full protection
  - Administrative/paperwork: register, paperwork
  - **Tests:** collect nasal swab and sputum samples
  - **Discharge:**
    - Educational document
    - Contact information
- **Please ensure proper PPE are used for all workers**

Drive-Through COVID-19 testing (“initial diagnostic testing”)

FOUO



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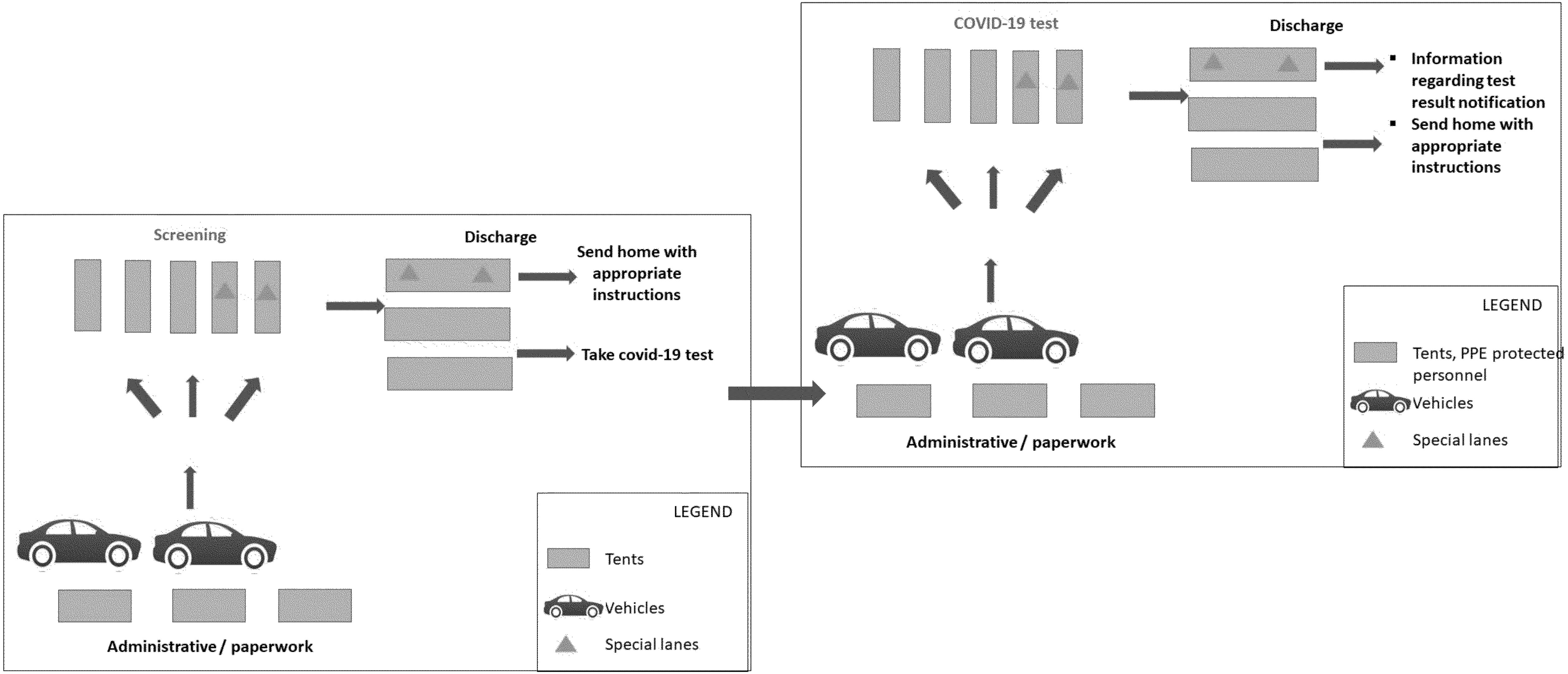
Drive-Through screening + testing combined

FOUO



EK Lee, evalee-gatech@pm.me, Copyright materials 2020

To: Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]
Cc: Tracey McNamara[tmcNamara@westernu.edu]; Dr. Eva K Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva
Caneva, Duane (DHS.GOV)[duane.caneva@hq.dhs.gov]; eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@HHS.GOV]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; Wolfe, Herbert (DHS.GOV)[herbert.wolfe@hq.dhs.gov]; alexander.eastman@hq.dhs.gov[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin (OS/ASPR/IO)[Kevin.Yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; david.a.tarantino@cbp.dhs.gov[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito (FEMA.DHS.GOV)[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis
From: Carter
Sent: Wed 3/18/2020 1:03:51 PM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March
Field Briefing Diamond Princess.pptx
image001.png
image002.png
image003.png

Archiving this for future reference.

Below are the latest numbers I have for the Diamond Princess. It represents the best population estimates of attack rate and mortality data we have for a circumscribed population (3,711 passengers and crew). Japan's NIID published a field briefing on Feb 21 that I previously shared (attached again for those of you who haven't seen it). The last of the crew left the ship on March 15.
https://www3.nhk.or.jp/nhkworld/en/news/20200316_10/

There was another death of a passenger who returned to Hong Kong on Mar 7, making the total death count 8. The final case count (number confirmed by my reckoning) is 767. The CFR is 1.0%.

Here is the age distribution of the ship compared to the US pop and the to veterans (a much closer match).

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution
0-9 years	40,243,098	12%	16	0%
10-19 years	41,910,114	13%	23	1%
20-29 years	45,489,095	14%	347	9%
30-39 years	43,204,209	13%	428	12%
40-49 years	40,617,231	12%	334	9%
50-59 years	43,409,050	13%	398	11%

60-69 years	36,824,083	11%	923	25%
70-79 years	21,588,326	7%	1,015	27%
>80 years	12,433,972	4%	227	6%
Total population	**325,719,178**	**100%**	**3,711**	**100%**

Distribution of adult population

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans VetPop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	**100%**	**3,711**	**100%**	**19,209,704**	**100%**

Here is the summary of the Diamond Princess Outbreak

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		

8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,894 tested; 35 seriously ill; 380 asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan; US reports total of 44 cases in US	753	6	
29-Feb	Australia reports death; Israel reports (+1) 3 cases; Japan (+2)	756	7	
1-Mar	HK reports (+1) 5 cases	757	7	

1-Mar	Australia (+2) 10 cases (repatriated)	759	7	
2-Mar	Japan report (+1) 706 cases; US reports (+1) 45 cases	761	7	
5-Mar	Japan report (+8) but also corrects total (elimiates duplicates) to 696	751	7	
7-Mar	Hong Kong reports death of passenger	751	8	
15-Mar	Japan reports (+15) with total of 712	767	8	1% CFR

Sent from Mail for Windows 10

From: Carter Mecher
Sent: Wednesday, March 18, 2020 12:13 PM
To: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPORTED BY SENTINEL PROVIDERS											
YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	NUM. OF PROVIDERS	% UNWEIGH ILI
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	2,907	1.50434
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	2,938	1.60062

2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	2,962	1.74176
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	2,992	1.86264
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	3,003	2.01412
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	3,018	2.36006
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	2,986	2.62939
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	2,981	2.9516
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	2,990	3.42406
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	2,986	3.29862
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	2,947	3.86227
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	2,917	5.02905
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	2,906	7.14443
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	2,949	6.22886
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	2,976	5.08047
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	2,967	5.37322
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	2,966	6.02641
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	2,956	6.89746
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	2,960	7.09968
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	2,916	6.22684
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	2,914	5.62976
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	2,826	5.12485
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	2,625	5.3537

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)
Sent: Wednesday, March 18, 2020 11:27 AM
To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin

(OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher
Sent: Tuesday, March 17, 2020 7:42 PM
To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan	1-Feb	30-Jan	24-Jan
Date of 1st Death	15-Feb	4-Mar	21-Feb	29-Feb

	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	1
1-Mar	130	2	84		1,694	34	73	1
2-Mar	191	3	120		2,036	52	99	6
3-Mar	212	4	151		2,502	79	103	6
4-Mar	285	4	202		3,089	107	154	11
5-Mar	423	7	248	1	3,858	148	197	12
6-Mar	613	9	517	10	4,636	197	309	15
7-Mar	949	16	613	17	5,833	233	434	19
8-Mar	1,126	19	848	25	7,375	366	544	22
9-Mar	1,412	30	1,231	30	9,172	463	728	27
10-Mar	1,784	33	1,646	35	10,149	631	1,010	31
11-Mar	2,281	49	2,277	55	12,462	827	1,311	38
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	40
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	48
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	58

15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	69
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	87
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*	*104*

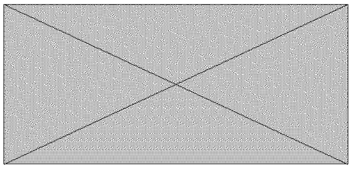
Sent from Mail for Windows 10

From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

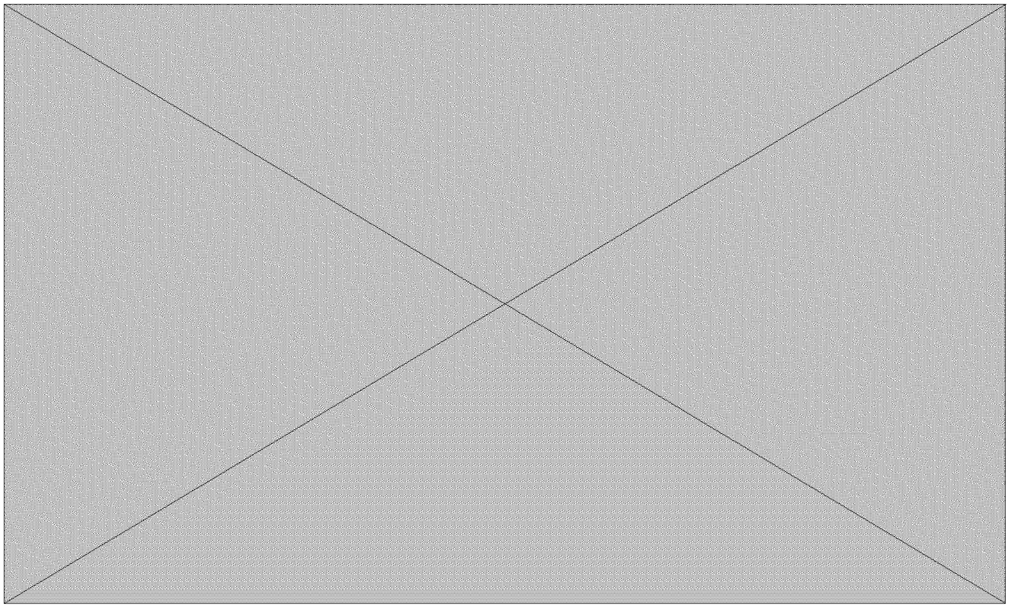


Channels

[ ][]

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48



Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient... That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager
Assistant Secretary for Preparedness and Response
Office: ___________
Cell: ___________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson Carter Mecher Dr. Eva Lee ___________ Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN ___________ Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@g HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson,

Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.
Tracey

Get Outlook for Android

From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
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On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Tuesday, March 17, 2020 12:42 PM, Brian Benson wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?
What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.
Tracey

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From: Dr. Eva Lee <eva.evalee.lee64@gmail.com>
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher
Cc: 1974usna@gmail.com Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Brian Benson Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 9:09 AM
To: Carter Mecher
Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO);

WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher ________________ wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:
Sent: Monday, March 16, 2020 11:58 PM
To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; jamison.day@gmail.com; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'
Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Sent: Monday, March 16, 2020 10:54 PM
To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee <eva.evalee.lee64@gmail.com>; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>;

DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson MothersheadtJerry L. Brian Benson Dr. Eva K Lee
Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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Field Briefing: Diamond Princess COVID-19 Cases, 20 Feb Update

National Institute of Infectious Diseases

Published Feb 21, 2020

https://www.niid.go.jp/niid/en/2019-ncov-e.html

Preliminary Results:

As of 20 February, 619 cases have been confirmed (16.7 % of the population on board), including 82 crew and 537 passengers. A total 3011 respiratory specimens were tested, and 621 were positive (20.6%), including double tests. Persons aboard between 70 and 89 were the most affected (Table 1). Among confirmed COVID-19 cases with recorded symptom onset (n=197), there were 34 (17.3 %) with onset dates before 6 February, which was the first full day of quarantine, and 163 (82.7%) with onset dates on or after the 6th (Figure 1). Among these 197 cases, 163 occurred during the quarantine period (48 crew, 115 passengers), with 52-92 among passengers in cabins without a previously confirmed case (Table 2). Of these, 3-7 occurred after the median quarantine day (day 7). The proportion of COVID-19 cases confirmed among passengers increased with cabin occupancy (Figure 2). A total 318 (51%) of all confirmed cases were asymptomatic when the respiratory specimen was collected (10 crew and 308 passengers).

Preliminary Conclusions:

Based on current available epidemiologic information, there is clear evidence that substantial transmission of SARS-CoV-2 was occurring prior to arrival of Diamond Princess in Yokohama. The subsequent decline in the number of confirmed cases with reported onset dates, may be explained by the natural course of the outbreak, by the implementation of quarantine measures, or by other unknown factors. Based on the cabin occupancy findings and the number of cases identified in cabins with previously confirmed cases, passengers within cabins may have been exposed to a common source or may have transmitted the virus within cabins. Due to the nature of the ship, individual isolation of all those aboard was not possible. Sharing cabins was necessary, and some crew had to perform essential duties while passengers remained aboard. After accounting for delayed reporting, the peak number of confirmed cases with known onset dates occurred on 7 February. The high number of recently reported cases can be explained by the shift in testing strategy described above, most of which were asymptomatic.

The proportion of asymptomatic cases observed aboard Diamond Princess is substantially higher than what has been reported elsewhere. A major factor in this proportion is the systematic testing of passengers that began on 11 Feb and increased each day. Due to the lack of symptom presentation, it is not possible to infer when these cases were infected (see Annex A). Some may have been secondary cases within a given cabin. Some may have been infected before the quarantine began. Nevertheless, these asymptomatic cases were detected through testing, disembarked, and transferred to isolation. Their cabin mates have been defined as close contacts with their 14-day isolation reset on the last day the asymptomatic case disembarked. The systematic testing of asymptomatic cases was therefore important and beneficial for identifying potentially infectious individuals before allowing them to disembark. Current global research has scant evidence on asymptomatic transmission of SARS-CoV-2; thus, ongoing efforts to thoroughly investigate asymptomatic cases from Diamond Princess will provide important information for the global COVID-19 outbreak. (Information on the development of symptoms after disembarkation of asymptomatic confirmed cases is being collected.)

Surveillance staff are working on merging the data from Diamond Princess with information from reported COVID-19 cases in the National Epidemiological Surveillance of Infectious Diseases (NESID) to understand more about the clinical presentation, severity and initial asymptomatic presentation. This information will be important for further the understanding this event and the global situation of COVID-19.

Preliminary Actions/Guidance:

Nearly all disembarked individuals have observed a 14-day quarantine without sharing a cabin with a confirmed case, have received a recent negative PCR-test, and have passed a medical screening for symptoms (e.g. fever, cough,). Individuals who shared a cabin with a confirmed case will be put in isolation until they complete a 14-day beginning after the last day of contact with a confirmed COVID-19 cabinmate. This includes a large proportion of the crew, who admirably performed essential tasks that allowed the quarantine to occur and should be appreciated for their service. As more than 1600 individuals, primarily passengers, have been disembarked from Diamond Princess, the focus and support will now shift toward preventing further transmission of SARS-CoV-2 among crew.

Although the disembarked persons have passed laboratory testing, medical screening and the 14-day quarantine, they are asked to stay at home, where feasible, 14 days unless absolutely necessary, as an additional precautionary measure. They are asked also to monitor themselves for symptoms and contact a a healthcare facility if symptoms develop.

Note: this work would not have been possible without the important efforts of medical teams who went aboard Diamond Princess to care for passengers and crew and obtain this necessary information; the efforts of the crew to provide essential services; and the collaboration of Princess Cruises.

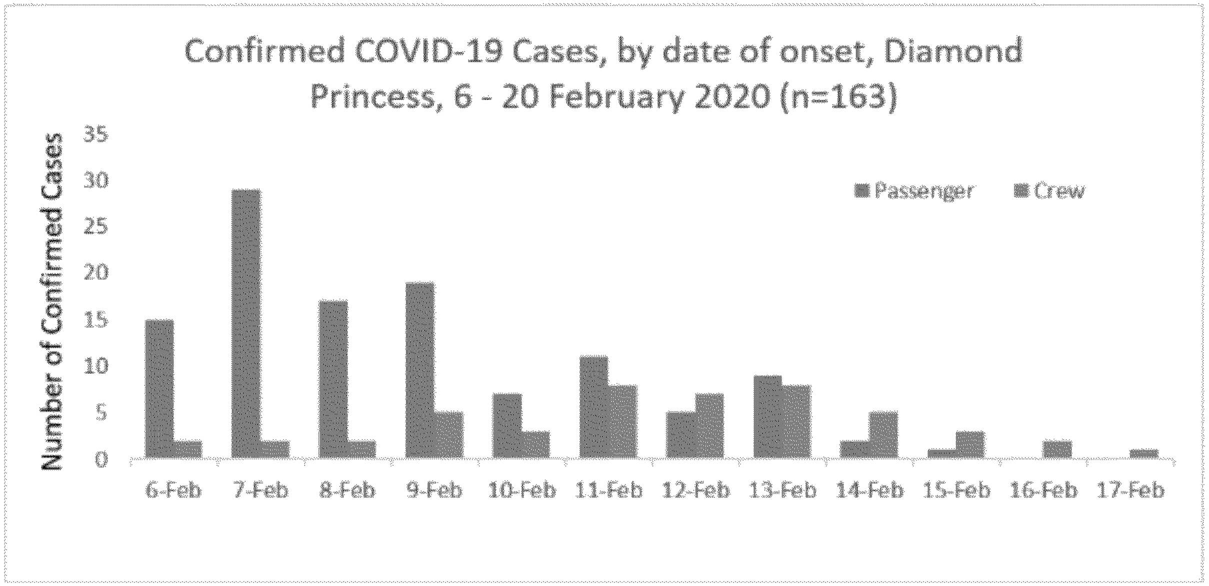
Table 1. Percent of persons aboard confirmed with COVID-19 by age group and symptom status at the time of specimen collection. (As of 20 February).

Age group	Symptomatic confirmed cases (%)	Asymptomatic confirmed cases (%)	Total confirmed cases (%)	Persons aboard on 5 February
00-09	0(0)	1(6)	1(6)	16
10-19	2(9)	3(13)	5(22)	23
20-29	25(7)	3(1)	28(8)	347
30-39	27(6)	7(2)	34(8)	428
40-49	19(6)	8(2)	27(8)	334
50-59	28(7)	31(8)	59(15)	398
60-69	76(8)	101(11)	177(19)	923
70-79	95(9)	139(14)	234(23)	1015
80-89	27(13)	25(12)	52(24)	216
90-99	2(18)	0(0)	2(18)	11
Total	**301(8)**	**318(9)**	**619(17)**	**3711**

6/39 kids (age <20) were confirmed to have infection (15.4%)

5/23 kids (age 10-19) were confirmed to have infection (22%)

Figure 1. Number of confirmed COVID-19 cases* with reported onset dates, by onset date, aboard Diamond Princess, 6 - 20 February 2020 (n=163)



＊ The number of cases (n = 163) was based on the cases with available onset date reported.

Figure 2. Comparison of proportions of confirmed cases among passengers by cabin occupancy.

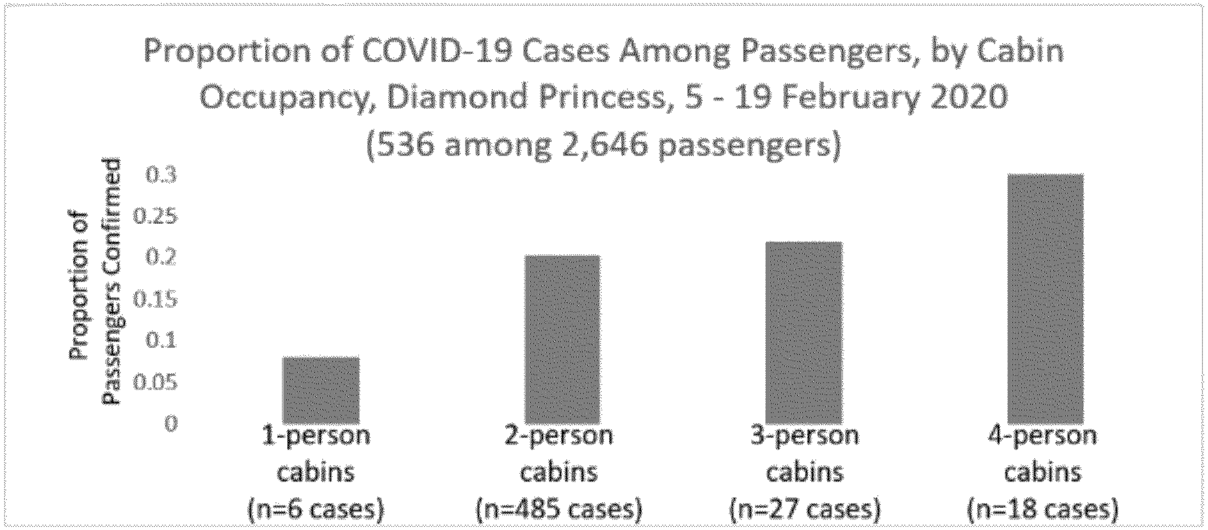


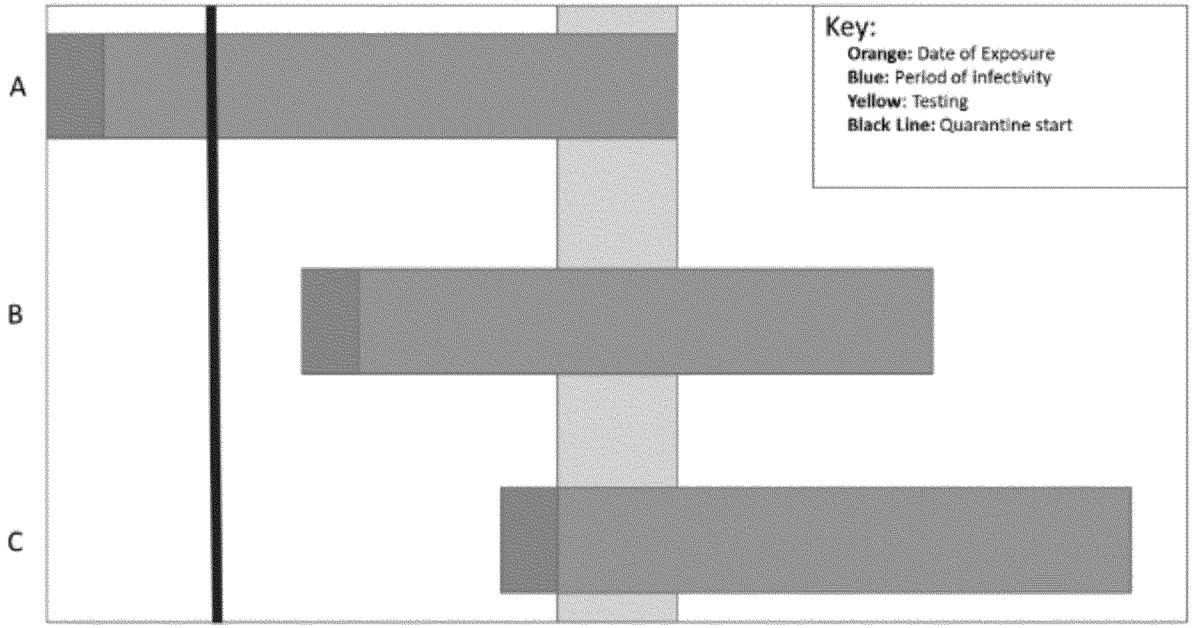
Table 2. Characteristics of COVID-19 Cases with reported on-set dates of 6 – 17 Feb 2020 (n=163).

Table 2. Characteristics of COVID-19 Cases with reported on-set dates of 6 – 17 Feb 2020 (n=163).

Day of Quarantine	Date of Onset (n cases)	Crew	Passengers		
			Total	In cabins with a confirmed case	In cabins without a confirmed case
12	17 Feb (1)	1	0	0	0
11	16 Feb (2)	2	0	0	0
10	15 Feb (4)	3	1	0 [1]	0–1
9	14 Feb (7)	5	2	1 [0]	1
8	13 Feb (17)	8	9	4 [3]	2–5
7	12 Feb (12)	7	5	0 [2]	3–5
6	11 Feb (19)	8	11	3 [1]	7–8
5	10 Feb (10)	3	7	3 [1]	3–4
4	9 Feb (24)	5	19	6 [9]	4–13
3	8 Feb (19)	2	17	1 [7]	9–16
2	7 Feb (31)	2	29	4 [10]	15–25
1	6 Feb (17)	2	15	1 [6]	9–14
	Total	**48**	**115**	**23 [40]**	**52–92**

The number in brackets represents the number of additional confirmed cases in the same cabin with unknown onset date. Due to the uncertainty of knowing which case came first, the column to the far right presents a range.

Annex A. Theoretical depiction of the identification of asymptomatic cases during the quarantine period.



This image suggests three potential scenarios for detection of asymptomatic COVID-19 cases on the Diamond Princess: A) an individual who developed mild or unnoticeable symptoms and self-identified as asymptomatic and was confirmed by testing period during the later infectivity period; B) an individual who had no acute respiratory infection symptoms during the course of the infection and was identified by test as infected (i.e. "true asymptomatic"; C) an individual with a recent infection who has not yet developed symptoms and was identified by test before symptom onset.

To: Dr. Eva K Carter
Cc: Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva Caneva, Duane (DHS.GOV)[duane.caneva@hq.dhs.gov]; eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@HHS.GOV]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1 HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; Wolfe, Herbert (DHS.GOV)[herbert.wolfe@hq.dhs.gov]; alexander.eastman@hq.dhs.gov[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin (OS/ASPR/IO)[Kevin.Yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; david.a.tarantino@cbp.dhs.gov[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito (FEMA.DHS.GOV)[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis
From: Tracey McNamara[tmcNamara@westernu.edu]
Sent: Wed 3/18/2020 1:21:22 PM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).
https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 10:09 AM
To: Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>;

WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

> I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).
>
> I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.
>
> https://newton.isye.gatech.edu/DrLee/
> mobile:
>
> Sent with ProtonMail Secure Email.
>
> ------- Original Message -------
> On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:
>
>> Some update on screening and testing -
>> 1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.
>>
>> 2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I

included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:

Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPORTED BY SENTINEL P

YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	NUM. OF PROVIDERS	% UNWEIGH ILI
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	2,907	1.5043
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	2,938	1.6006
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	2,962	1.7417

2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	2,992	1.86264
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	3,003	2.01412
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	3,018	2.36006
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	2,986	2.62939
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	2,981	2.9516
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	2,990	3.42406
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	2,986	3.29862
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	2,947	3.86227
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	2,917	5.02905
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	2,906	7.14443
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	2,949	6.22886
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	2,976	5.08047
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	2,967	5.37322
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	2,966	6.02641
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	2,956	6.89746
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	2,960	7.09968
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	2,916	6.22684
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	2,914	5.62976
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	2,826	5.12485
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	2,625	5.3537

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)
Sent: Wednesday, March 18, 2020 11:27 AM
To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr,

Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher
Sent: Tuesday, March 17, 2020 7:42 PM
To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee- Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV)

<duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum
20-Feb	12	1	2		3	0	15	

21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	
1-Mar	130	2	84		1,694	34	73	
2-Mar	191	3	120		2,036	52	99	
3-Mar	212	4	151		2,502	79	103	
4-Mar	285	4	202		3,089	107	154	
5-Mar	423	7	248	1	3,858	148	197	
6-Mar	613	9	517	10	4,636	197	309	
7-Mar	949	16	613	17	5,833	233	434	
8-Mar	1,126	19	848	25	7,375	366	544	
9-Mar	1,412	30	1,231	30	9,172	463	728	
10-Mar	1,784	33	1,646	35	10,149	631	1,010	
11-Mar	2,281	49	2,277	55	12,462	827	1,311	
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*	[illegible]

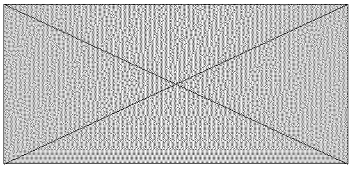
Sent from Mail for Windows 10

From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.



Channels

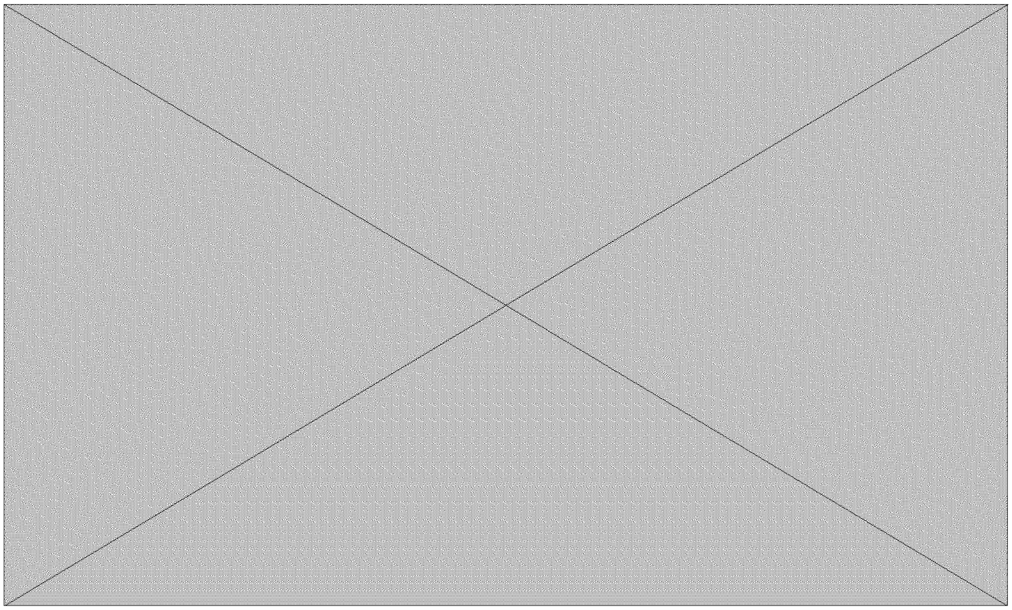
[ ][]

HOME >> **CHINA,SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

369



Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ___________

Cell: ___________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson Carter Mecher Dr. Eva Lee ___________ Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>;

LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

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From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee <eva.evalee
Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb
William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1
Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1
HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO)

<Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar
Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson
Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
rdarling@patronusmedical.com
https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

> We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend

the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian. wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

Get Outlook for Android

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher
Cc:
Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN
Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>;

Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar

Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson <ronny

Brian Benson <brian.

Dr. Eva K Lee <evalee-

Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves

will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png
>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally

(OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher
wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

---

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee

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MothersheadtJerry L.
Brian Benson
<brian. Dr. Eva K Lee

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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To: Tracey McNamara[tmcNamara@westernu.edu]; Dr. Eva K Carter

Cc: Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva

eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@HHS.GOV]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]
From: Caneva, Duane[duane.caneva@hq.dhs.gov]
Sent: Wed 3/18/2020 1:50:12 PM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March
2020_03_18_mql_covid-19-sars-cov-2_-_cleared_for_public_release.pdf

DHS Science and Technology Master Question List most recent version attached and available here:
https://www.dhs.gov/publication/st-master-question-list-covid-19
For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Wednesday, March 18, 2020 1:21 PM
To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).
https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 10:09 AM
To: Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

> I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).
>
> I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:

Some update on screening and testing -
1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.

2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:

Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPORTED BY SENTINEL PR

YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	NUM. OF PROVIDERS	% UNWEIGH ILI
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	2,907	1.50434
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	2,938	1.60062
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	2,962	1.74176
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	2,992	1.86264
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	3,003	2.01412
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	3,018	2.36006
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	2,986	2.62939
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	2,981	2.9516
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	2,990	3.42406
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	2,986	3.29862
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	2,947	3.86227
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	2,917	5.02905
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	2,906	7.14443
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	2,949	6.22886
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	2,976	5.08047
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	2,967	5.37322
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	2,966	6.02641
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	2,956	6.89746
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	2,960	7.09968
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	2,916	6.22684
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	2,914	5.62976
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	2,826	5.12485
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	2,625	5.3537

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)
Sent: Wednesday, March 18, 2020 11:27 AM
To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher
Sent: Tuesday, March 17, 2020 7:42 PM
To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee- Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan	1-Feb	30-Jan	24-Jan

Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	
1-Mar	130	2	84		1,694	34	73	
2-Mar	191	3	120		2,036	52	99	
3-Mar	212	4	151		2,502	79	103	
4-Mar	285	4	202		3,089	107	154	
5-Mar	423	7	248	1	3,858	148	197	
6-Mar	613	9	517	10	4,636	197	309	
7-Mar	949	16	613	17	5,833	233	434	
8-Mar	1,126	19	848	25	7,375	366	544	
9-Mar	1,412	30	1,231	30	9,172	463	728	
10-Mar	1,784	33	1,646	35	10,149	631	1,010	
11-Mar	2,281	49	2,277	55	12,462	827	1,311	
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	

14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*	[illegible]

Sent from Mail for Windows 10

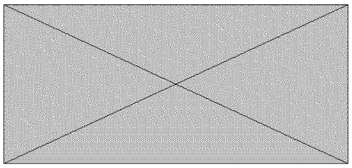
From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If

all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.



Channels

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Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

369

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ____________

Cell: ____________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson Carter Mecher Dr. Eva Lee ____________________ Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO)

<Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

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From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee <eva.evalee Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin

(OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1
HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar
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Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
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https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian. wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

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From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher
Cc:
Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1

Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY

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Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents

appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png
>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be

placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A';

'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

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From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee

CHRISTOPHER ALLEN <CHRISALLEN

Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR)

<daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson

MothersheadtJerry L.

Brian Benson

<brian. Dr. Eva K Lee

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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DHS SCIENCE AND TECHNOLOGY

Master Question List for COVID-19 (caused by SARS-CoV-2)

Weekly Report

12 March 2020

For comments or questions related to the contents of this document, please contact the DHS S&T Hazard Awareness & Characterization Technology Center at HACTechnologyCenter@hq.dhs.gov.

Homeland Security

Science and Technology

DHS Science and Technology Directorate | MOBILIZING INNOVATION FOR A SECURE WORLD

CLEARED FOR PUBLIC RELEASE

FOREWORD

The Department of Homeland Security (DHS) is paying close attention to the evolving Coronavirus Infectious Disease (COVID-19) situation in order to protect our nation. DHS is working very closely with the Centers for Disease Control and Prevention (CDC), other federal agencies, and public health officials to implement public health control measures related to travelers and materials crossing our borders from the affected regions.

Based on the response to a similar product generated in 2014 in response to the Ebolavirus outbreak in West Africa, the DHS Science and Technology Directorate (DHS S&T) developed the following "master question list" that quickly summarizes what is known, what additional information is needed, and who may be working to address such fundamental questions as, "What is the infectious dose?" and "How long does the virus persist in the environment?" The Master Question List (MQL) is intended to quickly present the current state of available information to government decision makers in the operational response to COVID-19 and allow structured and scientifically guided discussions across the federal government without burdening them with the need to review scientific reports, and to prevent duplication of efforts by highlighting and coordinating research.

The information contained in the following table has been assembled from publicly available sources to include reports and articles found in scientific and technical journals, selected sources on the internet, and various media reports. It is intended to serve as a "quick reference" tool and should not be regarded as comprehensive source of information, nor as necessarily representing the official policies, either expressed or implied, of the DHS or the U.S. Government. DHS does not endorse any products or commercial services mentioned in this document. All sources of the information provided are cited so that individual users of this document may independently evaluate the source of that information and its suitability for any particular use. This document is a "living document" that will be updated as needed when new information becomes available.

SARS-CoV-2 (COVID-19)	Infectious dose – how much agent will make a normal individual ill?	Transmissibility – How does it spread from one host to another? How easily is it spread?	Host range – how many species does it infect? Can it transfer from species to species?	Incubation period – how long after infection do symptoms appear? Are people infectious during this time?
What do we know?	• The human infectious dose for novel Wuhan coronavirus (SARS-CoV-2), which causes coronavirus disease 19 (COVID-19) is currently unknown via all exposure routes. Severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) coronaviruses (CoV) are used as surrogates. • The infectious dose for SARS in mice is estimated to be between 67-540 PFU (average 240 PFU, intranasal route).[49-50] • Genetically modified mice exposed intranasally to doses of MERS virus between 100 and 500,000 PFU show signs of infection. Infection with higher doses result in severe syndromes.[6, 40, 76, 137] • Initial experiments suggest that SARS-CoV-2 can infect genetically modified mice containing the human ACE2 cell entry receptor. Infection via the intranasal route (dose: 10^5 $TCID_{50}$) causes light infection, however no virus was isolated from infected animals, and PCR primers used in the study do not align well with SARS-CoV-2, casting doubt on this study.[12]	• The WHO considers COVID-19 a pandemic, with 124,564 cases and 4,589 deaths[67] in at least 114 countries (as of 3/11/2020).[23, 103, 122] • High-quality estimates of human transmissibility (R_0) range from 2.2 to 3.1[84, 91, 97, 128, 136] • There are 1,110 SARS-CoV-2 cases across 39 US states, with 30 deaths (as of 3/11/2020)[67]; there is sustained community transmission of COVID-19 in the US.[15] • SARS-CoV-2 transmission has occurred in hospitals inside[117] and outside of China,[57] including the US.[18] • Pre-symptomatic[138] or asymptomatic[11] patients in China can transmit SARS-CoV-2 • SARS-CoV-2 is believed to spread through close contact and droplet transmission.[28] • SARS-CoV-2 replicates in the upper respiratory tract (e.g., throat), and infectious virus is detectable in throat and lung tissue for at least 8 days.[124] • Viable SARS-CoV-2 has been isolated from human feces;[79] fecal-oral transmission is possible.[85, 132, 135] • Transmission via fomites has not been confirmed for SARS-CoV-2, but occurred in prior SARS[39, 129] and MERS[73] outbreaks • SARS-CoV-2 is consistently present in infected patient saliva[112] • Infants have been diagnosed with COVID-19, but no evidence exists for vertical transmission via intrauterine infection or through breastmilk.[37, 118] • China reports no evidence of super-spreading events (SSEs) within hospital patients or staff.[109]	• Early genomic analysis indicates similarity to SARS,[141] with a suggested bat origin.[5,41, 141] • Analysis of SARS-CoV-2 genomes suggests that a non-bat intermediate species is responsible for the beginning of the outbreak.[98] Although the identity of the intermediate species remains unconfirmed, pangolins may be a natural host of related viruses possibly including SARS-CoV-2.[80-81] • Positive samples from the South China Seafood Market strongly suggests a wildlife source,[30] though it is possible that the virus was circulating in humans before the disease was associated with the seafood market.[16, 42, 130, 134] • Experiments suggest that SARS-CoV-2 Spike (S) receptor-binding domain binds the human cell receptor (ACE2) stronger than SARS,[127] potentially explaining its high transmissibility; the same work suggests that differences between SARS-CoV-2 and SARS-CoV Spike proteins may limit the therapeutic ability of SARS antibody treatments.[127] • Modeling between SARS-CoV-2 Spike and ACE2 proteins suggests that SARS-CoV-2 can bind and infect human, bat, civet, monkey and swine cells.[116]	• The best current estimate of the COVID-19 incubation period is 5.1 days, with 99% of individuals exhibiting symptoms within 14 days of exposure.[72] Fewer than 2.5% of infected individuals show symptoms sooner than 2 days after exposure.[72] • The reported range of incubation periods is wide, with high-end estimates of 24,[56] 11.3,[10] and 18 days.[78] • Individuals can test positive for COVID-19 despite lacking clinical symptoms.[11, 32, 56, 109, 138] • Individuals can be infectious while asymptomatic,[28, 99, 109, 138] and asymptomatic individuals can have similar amounts of virus in their nose and throat as symptomatic individuals.[142] • Infectious period is unknown, but possibly up to 10-14 days[4, 103] • On average, there are 7.5 days between symptom onset in successive cases of a single transmission chain (i.e., the serial interval).[78] • Most individuals are admitted to the hospital within 8-14 days of symptom onset.[140] • Patients are positive for COVID-19 via PCR for 8-37 days after symptom onset.[140] • Individuals may test positive via PCR for 5-13 days after symptom recovery and hospital discharge,[70] despite the absence of clinical symptoms. The ability of these "test-positive" individuals to infect others is unknown. • According to the WHO, there is no evidence of re-infection with SARS-CoV-2 after recovery.[71]

SARS-CoV-2 (COVID-19)	Infectious dose – how much agent will make a normal individual ill?	Transmissibility – How does it spread from one host to another? How easily is it spread?	Host range – how many species does it infect? Can it transfer from species to species?	Incubation period – how long after infection do symptoms appear? Are people infectious during this time?
What do we need to know?	• Human infectious dose by aerosol route • Human infectious dose by surface contact (fomite) • Human infectious dose by fecal-oral route	• Capability of SARS-CoV-2 to be transmitted by contact with fomites (doorknobs, surfaces, clothing, etc.) – see also Experimental Stability • Superspreading capacity needs to be refined • What is the extent of asymptomatic transmission? • Updated person to person transmission rates (e.g., R_0) as control measures take effect • What is the underreporting rate?[66] • Can individuals become re-infected with SARS-CoV-2? • What is the difference in transmissibility among countries? • Is the R0 estimate higher in healthcare or long-term care facilities? • How effective are social distancing measures at reducing spread?	• What is the intermediate host(s)? • What are the mutations in SARS-CoV-2 that allowed human infection and transmission? • What animals can SARS-CoV-2 infect (e.g., pet dogs, potential wildlife reservoirs)?	• How early does asymptomatic transmission begin? • What is the average infectious period during which individuals can transmit the disease? • Are individuals infectious after hospital discharge and clinical recovery, or are positive PCR tests only detecting non-infectious virus? • Can individuals become re-infected after recovery? If so, how long after?
Who is doing experiments/has capabilities in this area?	*Capable of performing work* - DHS National Biodefense Analysis and Countermeasures Center (NBACC)	*Performing work:* - Christian Althaus (Bern) - Neil Ferguson (MRC) - Gabriel Leung, Joseph Wu (University of Hong Kong) - Sara Del Valle (Los Alamos) - Maimuna Majumder (Boston Children's Hospital) - Trevor Bedford (Fred Hutchinson Cancer Center) - Sang Woo Park (Princeton)	*Capable of performing work:* - Vincent Munster (Rocky Mountain National Laboratory) - Matthew Frieman (University of Maryland Baltimore) - Ralph Baric (University of North Carolina) - Stanley Perlman (University of Iowa) - Susan Baker (Loyola University Chicago) - Mark Denison (Vanderbilt University) - Vineet Menachery (University of Texas Medical Branch) - Jason McLellan, Daniel Wrapp, Nianshuang Wang (University of Texas) - David O'Conner (U. Wisconsin, Madison)	*Performing work:* - Chaolin Huang (Jin Yin-tan Hospital, Wuhan, China) - The Novel Coronavirus Pneumonia Emergency Response Epidemiology Team

SARS-CoV-2 (COVID-19)	Clinical presentation – what are the signs and symptoms of an infected person?	Clinical diagnosis – are there tools to diagnose infected individuals? When during infection are they effective?	Medical treatment – are there effective treatments? Vaccines?	Environmental stability – how long does the agent live in the environment?
What do we know?	• The majority of COVID-19 cases are mild (81%, N = 44,000 cases)[109] • Initial COVID-19 symptoms include fever (87.9% overall, but only 43.8% present with fever initially[56]), cough (67.7%[56]), fatigue, shortness of breath, headache, reduction in lymphocyte count.[29, 35, 63] Headache[34] and diarrhea are uncommon[63, 77] • Complications include acute respiratory distress (ARDS) observed in 17-29% of hospitalized patients,[38, 62] which leads to death in 4-15% of cases.[38, 63, 117] • Other complications include pneumonia,[89] cardiac injury, secondary infection, kidney failure, arrhythmia, sepsis, and shock.[56,63,117, 140] • Most deaths are caused by respiratory failure or respiratory failure combined with myocardial (heart) damage.[100] • Approximately 15% of hospitalized patients were classified as severe,[56, 109] and approximately 5% of patients were admitted to the ICU.[56, 109] • Between 23-32% of cases that include pneumonia required intensive respiratory support.[63, 117] • The case fatality rate (CFR) depends on patient comorbidities; cardiovascular disease, hypertension, diabetes, and respiratory conditions all increase the CFR.[109, 140] • The CFR increases with age; individuals older than 60 are at higher risk of death,[109, 140] and >60% of confirmed fatalities have been male.[109] • Approximately 1% of hospitalizations occur in children < 19 years old.[56, 109] • Children appear susceptible to SARS-CoV-2, but show milder clinical symptoms than adults.[36] • Recovery occurs in ~22 days, while death occurs in ~18 days.[140]	• Updated tests from the US CDC are available to states.[22, 28] • The FDA released an Emergency Use Authorization enabling laboratories to develop and use tests in-house for patient diagnosis.[55] • US CDC has expanded patient testing criteria to include symptomatic patients at clinician discretion.[14] • SARS-CoV-2 is consistently present in infected patient saliva, suggesting that saliva may be an effective diagnostic specimen.[112] • Several RT-PCR assays have been developed to detect SARS-CoV-2 in humans.[1, 45, 121, 123] • PCR protocols and primers have been widely shared among international researchers.[22, 46, 78, 106, 119, 123] • Several rapid or real-time test kits have been produced by universities and industry, including the Wuhan Institute of Virology,[48] BGI,[17] and Cepheid.[115] • RT-PCR tests are able to identify asymptomatic cases; SARS-CoV-2 infection was identified in 2/114 individuals previously cleared by clinical assessment.[61] • A combination of pharyngeal (throat) RT-PCR and chest tomography are the most effective diagnostic criteria (correctly diagnosing 91.9% of infections).[96] Single throat swabs alone detect 78.2% of true infections, while duplicate tests identify 86.2% of infections.[96] • The US CDC is developing serological tests to determine what proportion of the population has been exposed to SARS-CoV-2.[68] • Machine learning tools are being developed to predict severe and fatal COVID-19 cases based on CT scans.[107]	• The efficacy of antivirals (lopinavir, ritonavir, ribavirin, oseltamivir) is unknown[9]; however several therapeutics [Remdesivir[105] and chloroquine] inhibit SARS-CoV-2 infection in human cells *in vitro*[37] and are undergoing clinical trials in China[48] and the US.[2-3, 87] • Multiple entities are working to produce a SARS-CoV-2 vaccine, including NIH/NIAID,[59, 75] Moderna Therapeutics and Gilead Sciences,[2-3, 87] and Sanofi with HHS.[19] • The hospitalized case-fatality rate in China has decreased from 14.4% to 0.8% as of between December, 2019 and February, 2020,[109] suggesting improved treatment or capacity. • Approximately 38% of COVID-19 patients in China received oxygen therapy, 6.1% received mechanical ventilation, 57.5% received IV antibiotics, and 35.8% received the antiviral oseltamivir.[56] • A clinical report (one patient) suggested that corticosteroids should be considered for severe patients to prevent ARDS,[131] and corticosteroids are given to approximately 30% of COVID-19 patients.[140] However, US CDC recommends avoiding steroid use due to an increase in viral replication in MERS patients.[25] • Similarity in the spike proteins of SARS-CoV-2 and SARS-CoV might offer target for therapeutics,[43, 51, 74, 127, 141] as vaccines derived from spike proteins are effective at inhibiting MERS symptoms in mice.[40] • Takeda Pharma (Japan) is working to create antibody treatments based on infected patient plasma.[58] • Over 80 clinical trials are set to run on various treatments in China.[86]	*SARS-CoV-2 Data* • SARS-CoV-2 can persist on plastic and stainless steel surfaces for up to 3 days (at 21-23°C, 40% RH), with a half-life of 13-16 hours.[113] • SARS-CoV-2 has an aerosol half-life of 2.7 hours (particles <5 μm, tested at 21-23°C and 65% RH).[113] *Surrogate Coronavirus data*: • Studies suggest that other coronaviruses can survive on non-porous surfaces up to 9-10 days (MHV, SARS-CoV)[21, 33], and porous surfaces for up to 3-5 days (SARS-CoV)[53] in air conditioned environments (20-25°C, 40-50% RH) • Coronavirus survival tends to be higher at lower temperatures and lower relative humidity (RH),[21, 33, 94, 114] though infectious virus can persist on surfaces for several days in typical office or hospital conditions[114] • SARS can persist with trace infectivity for up to 28 days at refrigerated temperatures (4°C) on surfaces.[21] • Beta-coronaviruses (e.g., SARS-CoV) may be more stable than alpha-coronaviruses (HCoV-229E).[94] • No strong evidence for reduction in transmission with seasonal increase in temperature and humidity.[83] • One hour after aerosolization approximately 63% of airborne MERS virus remained viable in a simulated office environment (25°C, 75% RH)[92] • The aerosol survival of related human coronavirus (229E) was relatively high, (half-life of ~67 hours at 20°C and 50% RH), indicating ~20% of infectious virus remained after 6 days.[65] Both higher and lower RH reduced HCoV-229E survival; lower temperatures improved survival.[65]

SARS-CoV-2 (COVID-19)	Clinical presentation – what are the signs and symptoms of an infected person?	Clinical diagnosis – are there tools to diagnose infected individuals? When during infection are they effective?	Medical treatment – are there effective treatments? Vaccines?	Environmental stability – how long does the agent live in the environment?
What do we need to know?	• How long does it take for infected individuals to recover outside of a healthcare setting? • How does the CFR vary between countries? • Is the reduction in CFR through time an indication of better treatment, less overcrowding, or both?	• False positive/negative rates for tests • Eclipse phase of infection (time between infection and detectable disease) in an individual	• Is GS-5734 (remdesivir) effective in vivo (already used in clinical trials under Emergency Use Authorization)?[104] • Is the GLS-5000 MERS vaccine[133] cross-reactive against SARS-CoV-2? • Efficacy of antibody treatments developed for SARS[47, 108] and MERS[31] • What is the efficacy of various MERS and SARS Phase I/II vaccines and other therapeutics? • Are viral replicase inhibitors such as beta-D-N4-hydroxycytidine effective against SARS-CoV-2?[13]	• Stability of SARS-CoV-2 in aerosol, droplets, and other matrices (mucus/sputum, feces) • Particle size distribution (e.g., droplet, large droplet and true aerosol distribution) • Duration of SARS-CoV-2 infectivity via fomites and surface (contact hazard)? • Stability of SARS-CoV-2 on PPE (e.g., Tyvek, nitrile, etc.)
Who is doing experiments/has capabilities in this area?	- Jin Yin-tan Hospital, Wuhan, China - China-Japan Friendship Hospital, Beijing, China - Peking Union Medical College, Beijing, China - Capital Medical University, Beijing, China - Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China - Huazhong University of Science and Technology, Wuhan, China - The Central Hospital of Wuhan, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China - Tsinghua University School of Medicine, Beijing, China - Zhongnan Hospital of Wuhan University, Wuhan, China - Peking University First Hospital, Beijing, China - Peking University People's Hospital, Beijing, China - Tsinghua University-Peking University Joint Center for Life Sciences, Beijing, China - The Fifth Medical Center of PLA General Hospital, Beijing, China	*Performing work:* - CDC - Wuhan Institute of Virology - Public Health Agency of Canada - Doherty Institute of Australia - Cepheid - BGI - Fudan University	*Performing work:* - Peter Doherty Institute for Infection and Immunity - Academy of Military Medical Sciences, Beijing, China - Tim Sheahan (University of North Carolina) - Takeda Pharma. (Japan) *Capable of performing work:* - Ralph Baric (University of North Carolina) - Matthew Frieman (University of Maryland Baltimore) - Sanofi, with BARDA - Janssen Pharma and BARDA[60] *Funded work:* CEPI ($12 million to three groups): - Moderna and NIAID for mRNA platform vaccine - Inovio preparing DNA vaccine (for MERS) - University of Queensland, Australia NIAID/NIH: - Moderna and Kaiser Permanente for mRNA vaccine Phase I trial.[3] - University of Nebraska Medical Center Trial (multiple therapeutics including Gilead's Remdesivir).[2]	*Capable of performing work:* - Mark Sobsey (University of North Carolina) - DHS National Biodefense Analysis and Countermeasures Center (NBACC) - Defence Science and Technology Laboratory (Dstl) - Public Health Agency of Canada - CDC - EPA - NIH

SARS-CoV-2 (COVID-19)	Decontamination – what are effective methods to kill the agent in the environment?	PPE – what PPE is effective, and who should be using it?	Forensics – natural vs intentional use? Tests to be used for attribution.	Genomics – how does the disease agent compare to previous strains?
What do we know?	• No decontamination data for SARS-CoV-2 have been identified. SARS-CoV provides a plausible surrogate, as it is a close genetic relative of SARS-CoV-2 in the beta-coronavirus clade. • EPA has released a list of SARS-CoV-2 disinfectants, but solutions were not tested on live virus.[5] • Chlorine-based[121] and ethanol-based[44] solutions recommended, and the European CDC has released disinfectant guidelines for non-healthcare facilities.[54] • Heat treatment at 56°C is sufficient to kill coronaviruses,[94, 139] though effectiveness depends in part on amount of protein in contaminated media[94] • 70% ethanol, 50% isopropanol, sodium hypochlorite [bleach, 200 ppm], and UV radiation are effective at inactivating several coronaviruses (MHV and CCV)[101] • Ethanol-based biocides are effective disinfectants against coronaviruses dried on surfaces, including ethanol containing gels similar to hand sanitizer.[64, 125] • Surface spray disinfectants such as Mikrobac, Dismozon, and Korsolex are effective at reducing infectivity of the closely related SARS-CoV after 30 minutes of contact.[93] • Coronaviruses may be resistant to thermal inactivation for up to 7 days when stabilized in stool.[110-111] • Additionally, coronaviruses are more stable in matrixes such as respiratory sputum.[52] • Twice-daily cleaning with sodium dichloroisocyanurate decontaminated surfaces in COVID-19 patient hospital rooms.[88]	• PPE effectiveness for SARS-CoV-2 is currently unknown; SARS is used as a surrogate. • US CDC does not recommend the use of facemasks for healthy people. Facemasks should be used by people showing symptoms to reduce the risk of others getting infected. The use of facemasks is crucial for health workers and people in close contact with infected patients (at home or in a health care facility).[24] • "Healthcare personnel entering the room [of SARS-CoV-2 patients] should use standard precautions, contact precautions, airborne precautions, and use eye protection (e.g., goggles or a face shield)"[27] • WHO indicates healthcare workers should wear clean, non-sterile, long-sleeve gowns as well as gloves.[120] • Respirators (NIOSH-certified N95, EUFFP2 or equivalent) are recommended for those dealing with possible aerosols[121] • Additional protection, such as a Powered Air Purifying Respirator (PAPR) with a full hood, should be considered for high-risk procedures (i.e., intubation, ventilation)[20] • Healthcare worker illnesses (over 1,000[109]) demonstrates human-to-human transmission despite isolation, PPE, and infection control.[102] • Porous hospital materials, including paper and cotton cloth, maintain infectious SARS-CoV for a shorter time than non-porous material.[69] • CDC recommends facemasks for individuals attempting to prevent spread of SARS-CoV-2 in the home.[26] • Despite extensive environmental contamination, air sampling in patient rooms did not detect SARS-CoV-2.[88]	• Genomic analysis places SARS-CoV-2 into the beta-coronavirus clade, with close relationship to bat viruses. The SARS-CoV-2 virus is distinct from SARS and MERS viruses.[51] • Genomic analysis suggests that SARS-CoV-2 is a natural variant, and is therefore unlikely to be human-derived or otherwise created by "recombination" with other circulating strains of coronavirus.[7, 141] • Some genomic evidence indicates a close relationship with pangolin coronaviruses[126]; data suggests that pangolins may be a natural host for beta-coronaviruses [80-81]. Additional research is needed. • Genomic data support at least two plausible origins of SARS-CoV-2: "(i) natural selection in a non-human animal host prior to zoonotic transfer, and (ii) natural selection in humans following zoonotic transfer."[7] Either scenario is consistent the observed genetic changes found in all known SARS-CoV-2 isolates. • Additionally, "[…] SARS-CoV-2 is not derived from any previously used virus backbone," reducing the likelihood of laboratory origination,[7] and "[…] genomic evidence does not support the idea that SARS-CoV-2 is a laboratory construct, [though] it is currently impossible to prove or disprove the other theories of its origin."[7]	• There have been no documented cases of SARS-CoV-2 prior to December 2019 • Preliminary genomic analyses, however, suggest that the first human cases of SARS-CoV-2 emerged between 10/19/2019 – 12/17/2019.[8, 16, 95] • The mutation rate of SARS-CoV-2 is estimated to be similar to other RNA viruses (e.g., SARS, Ebola, Zika), and is currently calculated to be between 3.29×10^{-4} – 2.03×10^{-3} substitutions per site per year (median 1.07×10^{-3}),[8] though this estimate may change as more genomes are sequenced. • Preliminary phylogenetic analysis identified a very close genetic similarity between SARS-CoV-2 and a Bat coronavirus (RaTG13) isolated from Yunnan Province, China; suggesting that SARS-CoV-2 originated from bats.[90] • Pangolin coronaviruses are closely related to both SARS-CoV-2 and the closely related Bat coronavirus (RaTG13); phylogenetic analysis suggested that SARS-CoV-2 is of bat origin, but is closely related to pangolin coronavirus.[80-81] • The Spike protein of SARS-CoV-2, which mediates entry into host cells and is the major determinant of host range, is very similar to the Spike protein of SARS-CoV.[82] The rest of the genome is more closely related to two separate bat [82] and pangolin[81] coronavirus. • Protein modeling and preliminary laboratory studies suggest that SARS-CoV-2 binds to the human ACE2 receptor,[116, 127] the same cellular entry receptor used by SARS and other beta-coronaviruses.

SARS-CoV-2 (COVID-19)	Decontamination – what are effective methods to kill the agent in the environment?	PPE – what PPE is effective, and who should be using it?	Forensics – natural vs intentional use? Tests to be used for attribution.	Genomics – how does the disease agent compare to previous strains?
What do we need to know?	• What is the minimal contact time for disinfectants? • Are antiseptic wipes effective for cleaning hard, non-porous surfaces? • Does contamination with human fluids/waste alter disinfectant efficacy profiles? • How effective is air filtration at reducing transmission in healthcare, airplanes and public spaces?	• Mode of aerosol transmission? Effective distance of spread via droplet or aerosol? • How effective are barriers such as N95 respirators or surgical masks? • What is the appropriate PPE for first responders? Airport screeners? • Proper procedures for reducing spread in medical facilities / transmission rate in medical settings	• What tests for attribution exist for coronavirus emergence? • What is the identity of the intermediate species? • Are there closely related circulating coronaviruses in bats or other animals with the novel PRRA cleavage site found in SARS-CoV-2?	• Are there similar genomic differences in the progression of coronavirus strains from bat to intermediate species to human? • Are there different strains or clades of circulating virus? If so, do they differ in virulence?
Who is doing experiments/has capabilities in this area?	*Capable of performing work*: - DHS National Biodefense Analysis and Countermeasures Center (NBACC)	*Generating recommendations:* - WHO - CDC - Pan-American Health Organization	*Performing genomic investigations:* - Kristian Andersen, Andrew Rambaut, Ian Lipkin, Edward Holmes, Robert Garry (Scripps, University of Edinburgh, Columbia University, University of Sydney, Tulane, Zalgen Labs [Germantown, MD]) *Capable of performing work:* - Pacific Northwest National Laboratory - DHS National Biodefense Analysis and Countermeasures Center (NBACC)	*Performing work:* - Trevor Bedford (Fred Hutchinson Cancer Research Center) - Ralph Baric, UNC - National Institute for Viral Disease Control and Prevention, Chinese Center for Disease Control and Prevention - Shandong First Medical University and Shandong Academy of Medical Sciences - Hubei Provincial Center for Disease Control and Prevention - Chinese Academy of Sciences - BGI PathoGenesis Pharmaceutical Technology, Shenzhen, China - People's Liberation Army General Hospital, Wuhan, China - Wenzhou Medical University, Wenzhou, China - University of Sydney, Sydney, NSW, Australia - The First Affiliated Hospital of Shandong First Medical University (Shandong Provincial Qianfoshan Hospital), Jinan, China

Table 1. Definitions of commonly-used acronyms

Acronym/Term	Definition	Description
SARS-CoV-2	Severe acute respiratory syndrome coronavirus 2	Official name for the virus previously known as 2019-nCoV.
COVID-19	Coronavirus disease 19	Official name for the disease caused by the SARS-CoV-2 virus.
CFR	Case Fatality Rate	Number of deaths divided by confirmed patients
PFU	Plaque forming unit	Measurement of the number of infectious virus particles as determined by plaque forming assay. A measurement of sample infectivity.
$TCID_{50}$	50% Tissue Culture Infectious Dose	The number of infectious units which will infect 50% of tissue culture monolayers. A measurement of sample infectivity.
HCW	Healthcare worker	Doctors, nurses, technicians dealing with patients or samples
SARS	Severe Acute Respiratory Syndrome	Coronavirus with over 8,000 cases in global 2002-2003 outbreak
MERS	Middle-East Respiratory Syndrome	Coronavirus with over 2,000 cases in regional outbreak since 2012
CoV	Coronavirus	Virus typified by crown-like structures when viewed under electron microscope
R_0	Basic reproduction number	A measure of transmissibility. Specifically, the average number of new infections caused by a typical infectious individual in a wholly susceptible population.
MHV	Mouse hepatitis virus	Coronavirus surrogate
CCV	Canine coronavirus	Canine coronavirus
Fomite	Inanimate vector of disease	Surfaces such as hospital beds, doorknobs, healthcare worker gowns, faucets, etc.

Droplet transmission	Sneezing, coughing	Transmission via droplets requires relatively close contact (e.g., within 6 feet)
Airborne transmission	Aerosolization of infectious particles	Aerosolized particles can spread for long distances (e.g., between hospital rooms via HVAC systems)
Transgenic	Genetically modified	In this case, animal models modified to be more susceptible to MERS and/or SARS by adding proteins or receptors necessary for infection
Intranasal	Agent deposited into external nares of subject	Simulates inhalation exposure by depositing liquid solution of pathogen/virus into the nose of a test animal, where it is then taken up by the respiratory system.
Incubation period	Time between infection and symptom onset	Time between infection and onset of symptoms typically establishes guidelines for isolating patients before transmission is possible
Infectious period	Length of time an individual can transmit infection to others	Reducing the infectious period is a key method of reducing overall transmission; hospitalization, isolation, and quarantine are all effective methods
Serial interval	Length of time between symptom onset of successive cases in a transmission chain	The serial interval can be used to estimate R_0, and is useful for estimating the rate of outbreak spread
Superspreading	One individual responsible for an abnormally large number of secondary infections	Superspreading can be caused by high variance in the distribution of secondary cases caused by a single individual; most individuals infect very few people, while some infect a large number, even with the same average number of secondary infections
Nosocomial	Healthcare- or hospital-associated infections	Characteristic of SARS and MERS outbreaks, lead to refinement of infection control procedures
ACE2	Angiotensin-converting enzyme 2	Acts as a receptor for SARS-CoV, allowing entry into human cells

ARDS	Acute respiratory distress syndrome	Leakage of fluid into the lungs which inhibits respiration and leads to death
PPE	Personal protective equipment	Gowns, masks, gloves, and any other measures used to prevent spread between individuals
PCR	Polymerase chain reaction	PCR (or real-time [RT] or quantitative [Q] PCR) is a method of increasing the amount of genetic material in a sample, which is then used for diagnostic testing to confirm the presence of SARS -CoV-2

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Sent: Wed 3/18/2020 2:07:25 PM (UTC-04:00)
Subject: Re: Red Dawn Responding, Start 16 March

Adding a couple colleagues.
R/

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On Wed, Mar 18, 2020 at 1:53 PM Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:

DHS Science and Technology Master Question List most recent version attached and available here: https://www.dhs.gov/publication/st-master-question-list-covid-19

For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Wednesday, March 18, 2020 1:21 PM
To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).

https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 10:09 AM
To: Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee <eva.evalee. Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J

CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

> I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).
>
> I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all),

the lung's damage remains.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:

Some update on screening and testing -

1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.

2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:12 PM, Carter Mecher _______________ wrote:

Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPORTED BY SENTINEL P

YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	NUM. OF PROVIDERS	% UNWEIGH ILI
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	2,907	1.5043
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	2,938	1.6006
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	2,962	1.7417
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	2,992	1.8626
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	3,003	2.0141
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	3,018	2.3600
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	2,986	2.6293
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	2,981	2.951
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	2,990	3.4240
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	2,986	3.2986

2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	2,947	3.8622
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	2,917	5.0290
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	2,906	7.1444
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	2,949	6.2288
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	2,976	5.0804
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	2,967	5.3732
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	2,966	6.0264
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	2,956	6.8974
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	2,960	7.0996
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	2,916	6.2268
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	2,914	5.6297
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	2,826	5.1248
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	2,625	5.353

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)

Sent: Wednesday, March 18, 2020 11:27 AM

To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher

Sent: Tuesday, March 17, 2020 7:42 PM

To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>

Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee <eva.evalee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb <bg.richard William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary

(OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	
1-Mar	130	2	84		1,694	34	73	
2-Mar	191	3	120		2,036	52	99	

3-Mar	212	4	151		2,502	79	103	
4-Mar	285	4	202		3,089	107	154	
5-Mar	423	7	248	1	3,858	148	197	
6-Mar	613	9	517	10	4,636	197	309	
7-Mar	949	16	613	17	5,833	233	434	
8-Mar	1,126	19	848	25	7,375	366	544	
9-Mar	1,412	30	1,231	30	9,172	463	728	
10-Mar	1,784	33	1,646	35	10,149	631	1,010	
11-Mar	2,281	49	2,277	55	12,462	827	1,311	
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	
13-Mar	3,661	79						
14-Mar	4,499	91						
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	
16-Mar	6,633	148						
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*	

Sent from Mail for Windows 10

From: Brian Benson

Sent: Tuesday, March 17, 2020 3:10 PM

To: Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert

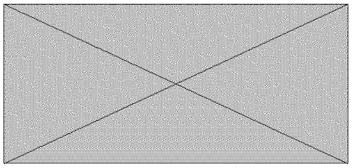
(OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.



Channels

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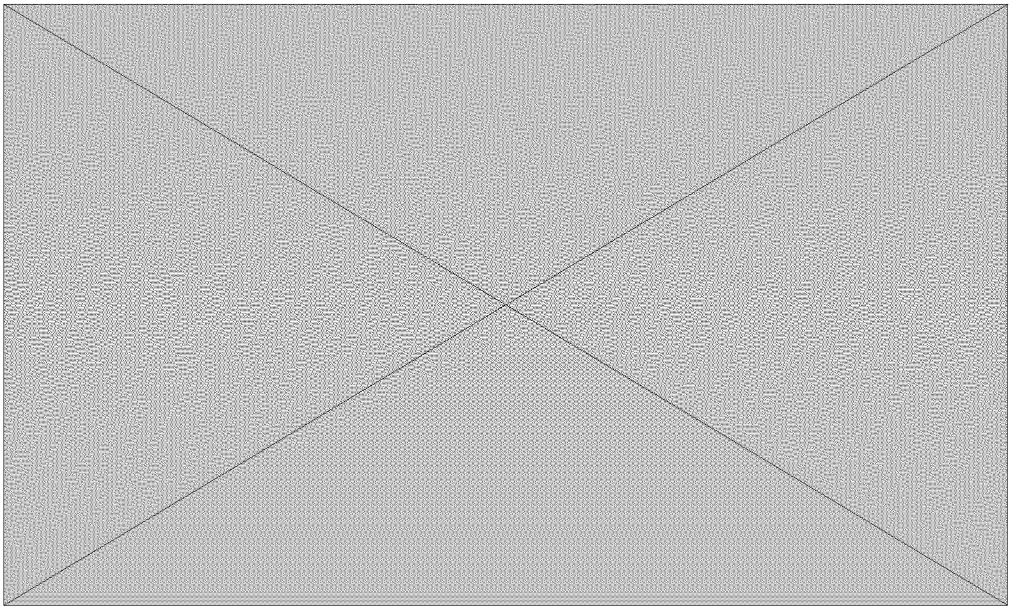
HOME >> **CHINA**,**SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48



Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ___________

Cell: ___________

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Tuesday, March 17, 2020 1:41 PM

To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>

Cc: Brian Benson Carter Mecher Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

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From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee <eva.evalee Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard. William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>;

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Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

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Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
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On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

> We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.
>
> Carter, I have no doubt community transmission began ealier, and I won't wait

for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson wrote:

> Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?
>
> > On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:
>
> When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?
>
> What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.
>
> Tracey
>
> Get Outlook for Android

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher
Cc:
Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1

Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>;

Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Brian Benson <brian. Dr. Eva K Lee <evalee-

Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png
>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu;

Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher __________ wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

From: Caneva, Duane
<duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric
<Eric.McDonald@sdcounty.ca.gov>; Carter
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Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson <ronny
MothersheadtJerry L.
Brian Benson
<brian. Dr. Eva K Lee

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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To: DeStefano, Laura[LDestefano@nas.edu]
Cc: Dzau, Victor J.[VDzau@nas.edu]; Georges Benjamin[georges.benjamin@apha.org]; drnickilurie(Del Rio, Carlos[cdelrio@emory.edu]; Sharon Inouye[SharonInouye@hsl.harvard.edu]; Linda Degutis Susan Polan[susan.polan@apha.org]; Ogilvie, Jenna[JOgilvie@nas.edu]; Kanarek, Morgan[MKanarek@nas.edu]; acasadevall@jhu.edu[acasadevall@jhu.edu]; ushah@hcphes.org[ushah@hcphes.org]; Figueroa, Angelica M[amfiguer@email.unc.edu]; Croitoru, Grace Nicole[gracenc@email.unc.edu]; Rimer, Barbara[brimer@unc.edu]; Andy Pavia[Andy.Pavia@hsc.utah.edu]; Jha, Ashish[ajha@hsph.harvard.edu]; Gold, Jeffrey P[jeffrey.gold@unmc.edu]; Heidi Larson[Heidi.Larson@lshtm.ac.uk]; Burke, Donald S[donburke@pitt.edu]; Tom Inglesby[tinglesby@jhu.edu]; Baric, Ralph S[rbaric@email.unc.edu]; Baric, Toni C[antoinette_baric@med.unc.edu]; Overton, Devona[DOverton@nas.edu]; May, David[DMay@nas.edu]; Kearney, William[WKearney@nas.edu]; Pope, Andrew[APope@nas.edu]; Pavlin, Julie[JPavlin@nas.edu]; Shah, Umair MD (PHS)[Umair.Shah@phs.hctx.net]; Arturo Casadevall[acasade1@jhu.edu]; Perez, Elizabeth (PHS)[Elizabeth.Perez@phs.hctx.net]; Castaneda, Tony (PHS)[Tony.Castaneda@phs.hctx.net]; Maria Jasen[mjasen1@jhu.edu]
From: Lawrence Gostin[gostin@georgetown.edu]
Sent: Wed 3/18/2020 2:10:14 PM (UTC-04:00)
Subject: Re: CONFIRMED - COVID-19 Conversations Webinar Series Advisory Group Meeting

Thanks Laura, If helpful for you and Victor, this just out this morning in JAMA

https://jamanetwork.com/journals/jama/fullarticle/2763423

Lawrence O. Gostin

Twitter:* *@LawrenceGostin

University Professor
Founding O'Neill Chair in Global Health Law
Faculty Director, O'Neill Institute for National and Global Health Law
Director, World Health Organization Collaborating Center on National & Global Health Law

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Human Rights in Global Health: Rights-Based Governance for a Globalizing World (2018), available from Oxford University Press or Amazon
Public Health Law and Ethics: A Reader (2018), available from University of California Press or Amazon

Public Health Law: Power, Duty, Restraint (2016), available from University of California Press or Amazon
Global Health Law (2014), available from Harvard University Press or Amazon

On Wed, Mar 18, 2020 at 2:05 PM DeStefano, Laura <LDestefano@nas.edu> wrote:

Background Materials:

Advisory Group Roster

March 19 Call Agenda

Hi there,

Laura DeStefano is inviting you to a scheduled Zoom meeting.

Topic: "COVID-19 Conversations" Webinar Series Advisory Group Call

Time: Mar 19, 2020 05:00 PM Eastern Time (US and Canada)

Join from PC, Mac, Linux, iOS or Android: https://nasem.zoom.us/

Or iPhone one-tap :

US: or 148#

Or Telephone:

Dial(for higher quality, dial a number based on your current location) :

US: or or or or or +1 or or or or or or or or or or or + or (Toll Free) or (Toll Free)

Meeting ID:

International numbers available: https://nasem.zoom.us/u/atQMQpnhh

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To: Tracey McNamara[tmcNamara@westernu.edu]; Dr. Eva K Carter

Cc: Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva

eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@HHS.GOV]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]
From: Caneva, Duane[duane.caneva@hq.dhs.gov]
Sent: Wed 3/18/2020 2:14:37 PM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March

Sorry for spam. The current MQL is still from 3/11. New one will be posted sometime today or tomorrow. Will repost the update when fresh.

From: Caneva, Duane
Sent: Wednesday, March 18, 2020 1:50 PM
To: Subject: RE: Red Dawn Responding, Start 16 March

DHS Science and Technology Master Question List most recent version attached and available here:
https://www.dhs.gov/publication/st-master-question-list-covid-19
For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Wednesday, March 18, 2020 1:21 PM
To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).
https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 10:09 AM
To: Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).

I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:

> Some update on screening and testing -
> 1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.
>
> 2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.
>
> Will have hospital resource analysis in my next email.
>
> Best, Eva
>
> https://newton.isye.gatech.edu/DrLee/
> mobile:
>
> Sent with ProtonMail Secure Email.
>
> ------- Original Message -------
> On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:
>
>> Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.
>>
>> I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of

outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPORTED BY SENTINEL PR											
YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	NUM. OF PROVIDERS	% UNWEIGH ILI
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	2,907	1.50434
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	2,938	1.60062
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	2,962	1.74176
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	2,992	1.86264
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	3,003	2.01412
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	3,018	2.36006
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	2,986	2.62939
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	2,981	2.9516
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	2,990	3.42406
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	2,986	3.29862
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	2,947	3.86227
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	2,917	5.02905
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	2,906	7.14443
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	2,949	6.22886
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	2,976	5.08047
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	2,967	5.37322
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	2,966	6.02641
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	2,956	6.89746
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	2,960	7.09968
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	2,916	6.22684
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	2,914	5.62976

2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	2,826	5.12485
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	2,625	5.3537

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)
Sent: Wednesday, March 18, 2020 11:27 AM
To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher
Sent: Tuesday, March 17, 2020 7:42 PM
To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee- Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	
1-Mar	130	2	84		1,694	34	73	
2-Mar	191	3	120		2,036	52	99	
3-Mar	212	4	151		2,502	79	103	
4-Mar	285	4	202		3,089	107	154	
5-Mar	423	7	248	1	3,858	148	197	
6-Mar	613	9	517	10	4,636	197	309	
7-Mar	949	16	613	17	5,833	233	434	
8-Mar	1,126	19	848	25	7,375	366	544	
9-Mar	1,412	30	1,231	30	9,172	463	728	

10-Mar	1,784	33	1,646	35	10,149	631	1,010
11-Mar	2,281	49	2,277	55	12,462	827	1,311
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*

Sent from Mail for Windows 10

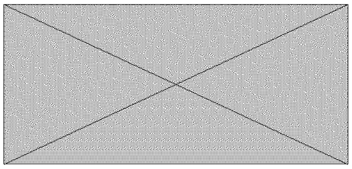
From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my

urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.



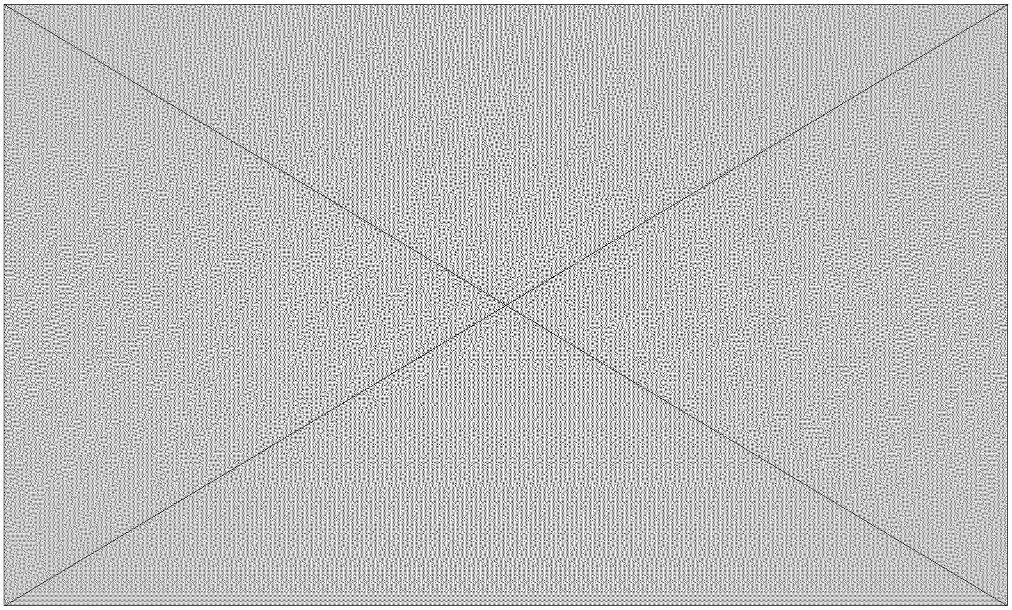
Channels

[ ][]

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

369



Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

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From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson Carter Mecher Dr. Eva Lee ____________ Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>;

Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

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From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee <eva.evalee Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS

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<jmcleod@patronusmedical.com>; Lauren Johnston
<ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
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https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-

0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian. wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

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From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher
Cc:
Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN

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HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson <ronny Brian Benson <brian. Dr. Eva K Lee <evalee-

Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these

other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png
>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel

history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED';

jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

---

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee

CHRISTOPHER ALLEN <CHRISALLEN

Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH

<Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson

MothersheadtJerry L.

Brian Benson
<brian. Dr. Eva K Lee

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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To: Caneva, Duane[duane.caneva@hq.dhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Dr. Eva K Lee[evalee-

Cc: Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva

eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@HHS.GOV]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]
From: Carter
Sent: Wed 3/18/2020 3:02:02 PM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March

Take a close look at the paper I shared yesterday re Italy. https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

I have been curious about how effectively this disease hides in plain view. The prevalence of disease in Seattle and NYC and northern Italy was obviously much greater than the initial numbers being reported.

Some have been asking why we only seem to be seeing severe outbreaks in the more northern latitudes. They ask, is weather playing a role? Other have asked why we aren't seeing it taking off in Africa? If you step back and look, it seems to be hitting the developed world much worse than the developing world. Everyone has been dreading the impact on the developing world. Is this delay simply due to greater population movement among the developed countries and late seeding of other parts of the globe? Is it possible that is could be hiding in plain view elsewhere because of the much younger populations in the developing world?

This paper points out the significant population differences and the consequences/advantages of a younger populations. These countries can potentially achieve herd immunity among a large relatively low risk population (based on age). Doesn't help us, but it might make a difference in subsequent waves.

2. Variation in fatality rates by different population structures

Here we replicate Figure 1 in Figures S4-S6 and show the variation in fatality rates with varying assumptions about the infection rate and relative risk differences between males and females.

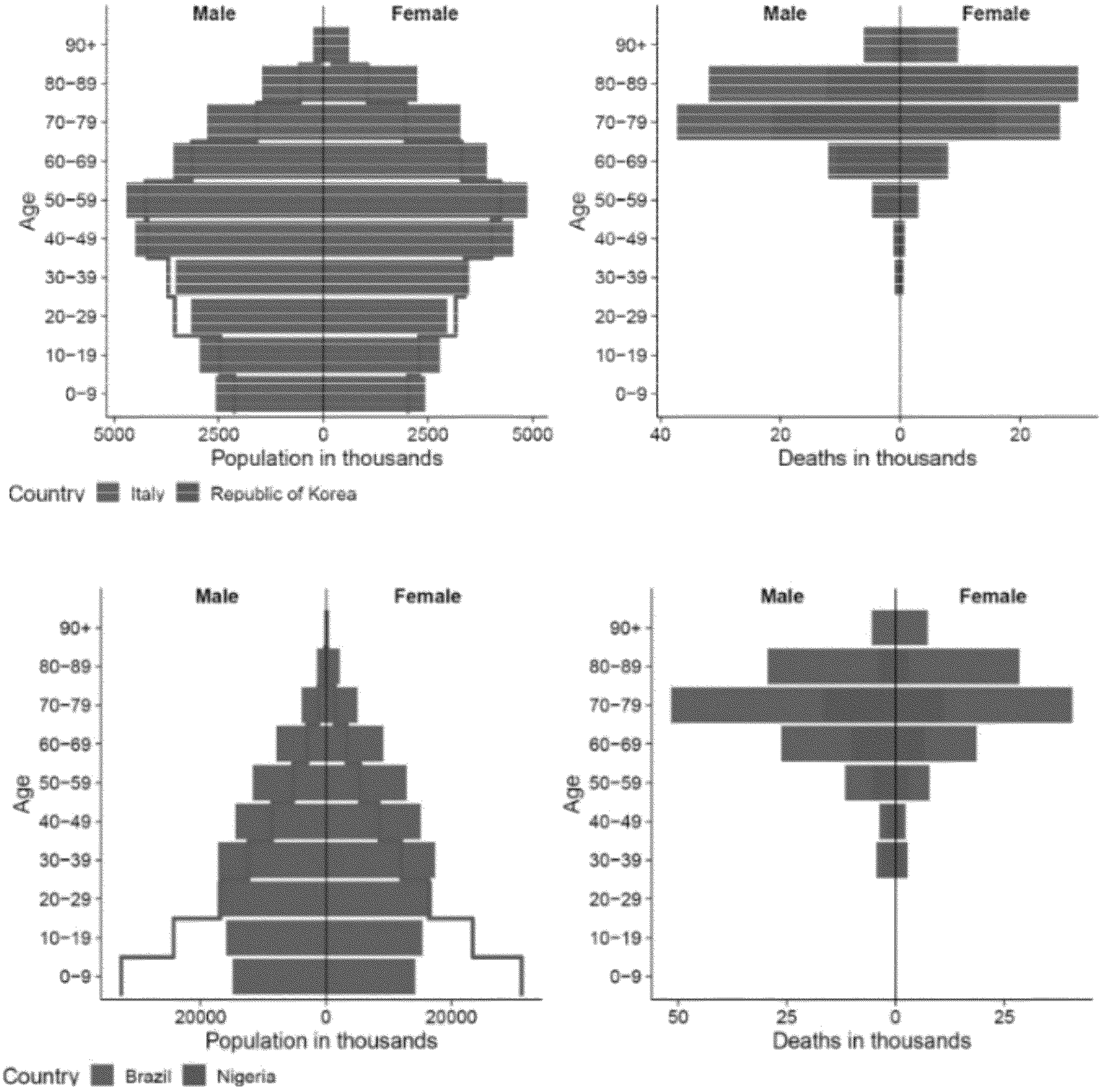

Figure S4. Population composition (left panel) and expected deaths in population (right panel), Italy and Republic of Korea (top panel) and Nigeria and Brazil (bottom panel) using Infection rate = 0.2; Relative risk M/F = 1.65

Sent from Mail for Windows 10

From: Carter Mecher
Sent: Wednesday, March 18, 2020 2:33 PM
To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee
Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David;

CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
Subject: RE: Red Dawn Responding, Start 16 March

Here is preliminary data on the current state of some of the countries in Europe we are following. UK is really exploding. Spain and Italy numbers continue to climb. Italy is now at 2,978 deaths. Italy is now about to overtake Hubei (3,122 total deaths). Will add US and France data later.

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	1
1-Mar	130	2	84		1,694	34	73	1
2-Mar	191	3	120		2,036	52	99	6
3-Mar	212	4	151		2,502	79	103	6
4-Mar	285	4	202		3,089	107	154	11
5-Mar	423	7	248	1	3,858	148	197	12
6-Mar	613	9	517	10	4,636	197	309	15

7-Mar	949	16	613	17	5,833	233	434	19
8-Mar	1,126	19	848	25	7,375	366	544	22
9-Mar	1,412	30	1,231	30	9,172	463	728	27
10-Mar	1,784	33	1,646	35	10,149	631	1,010	31
11-Mar	2,281	49	2,277	55	12,462	827	1,311	38
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	40
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	48
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	58
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	69
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	87
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423	108
18-Mar			13,716	533	35,713	2,978		

Sent from Mail for Windows 10

From: Carter Mecher
Sent: Wednesday, March 18, 2020 2:21 PM
To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee
Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
Subject: RE: Red Dawn Responding, Start 16 March

Just some updates. First NYC. NYC seeing explosive growth in cases and deaths. See story below. Prevalence is much higher than numbers suggest to already have 20 deaths and have 5/1,300 attendees to a conference last week (0.4%) confirmed to have COVID.
5 doctors test positive for coronavirus after attending a meeting in NYC om March 8-11. Roughly 1,300 physicians and educators traveled from across the country and Canada for a Midtown assembly organized by the Council of Residency Directors (CORD) in Emergency Medicine, opening the possibility that hundreds of emergency room doctors have been exposed to the disease.
Below is a summary of NY State and NYC numbers

	NYC State (19.4M)	NYC (8.6M)

Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	1		1
4-Mar	10		1
5-Mar	19		3
6-Mar	40		4
7-Mar	78		11
8-Mar	105		12
9-Mar	142		19
10-Mar	173		36
11-Mar	216		52
12-Mar	325		95
13-Mar	524		213
14-Mar	613	1	269
15-Mar	729	5	329
16-Mar	950	7	453
17-Mar	1,374	12	644
18-Mar	2,382	20	1,339

Sent from Mail for Windows 10

From: Caneva, Duane
Sent: Wednesday, March 18, 2020 1:52 PM
To: Tracey McNamara; Dr. Eva K Lee; Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris)

(OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
Subject: RE: Red Dawn Responding, Start 16 March

DHS Science and Technology Master Question List most recent version attached and available here:
https://www.dhs.gov/publication/st-master-question-list-covid-19
For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

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From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Wednesday, March 18, 2020 1:21 PM
To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).
https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 10:09 AM
To: Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven

Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

> I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).
>
> I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.
>
> https://newton.isye.gatech.edu/DrLee/
> mobile:
>
> Sent with ProtonMail Secure Email.
>
> ------- Original Message -------
> On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:
>
>> Some update on screening and testing -
>> 1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.
>>
>> 2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.
>>
>> Will have hospital resource analysis in my next email.
>>
>> Best, Eva
>>
>> https://newton.isye.gatech.edu/DrLee/
>> mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:

Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPORTED BY SENTINEL PR											
YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	NUM. OF PROVIDERS	% UNWEIGH ILI
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	2,907	1.50434
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	2,938	1.60062
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	2,962	1.74176
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	2,992	1.86264
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	3,003	2.01412
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	3,018	2.36006
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	2,986	2.62939
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	2,981	2.9516

2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	2,990	3.42406
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	2,986	3.29862
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	2,947	3.86227
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	2,917	5.02905
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	2,906	7.14443
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	2,949	6.22886
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	2,976	5.08047
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	2,967	5.37322
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	2,966	6.02641
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	2,956	6.89746
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	2,960	7.09968
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	2,916	6.22684
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	2,914	5.62976
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	2,826	5.12485
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	2,625	5.3537

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)
Sent: Wednesday, March 18, 2020 11:27 AM
To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry

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Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher
Sent: Tuesday, March 17, 2020 7:42 PM
To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee- Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>;

CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	

26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	
1-Mar	130	2	84		1,694	34	73	
2-Mar	191	3	120		2,036	52	99	
3-Mar	212	4	151		2,502	79	103	
4-Mar	285	4	202		3,089	107	154	
5-Mar	423	7	248	1	3,858	148	197	
6-Mar	613	9	517	10	4,636	197	309	
7-Mar	949	16	613	17	5,833	233	434	
8-Mar	1,126	19	848	25	7,375	366	544	
9-Mar	1,412	30	1,231	30	9,172	463	728	
10-Mar	1,784	33	1,646	35	10,149	631	1,010	
11-Mar	2,281	49	2,277	55	12,462	827	1,311	
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*	

Sent from Mail for Windows 10

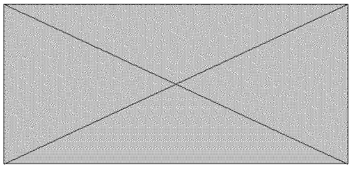
From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM

To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

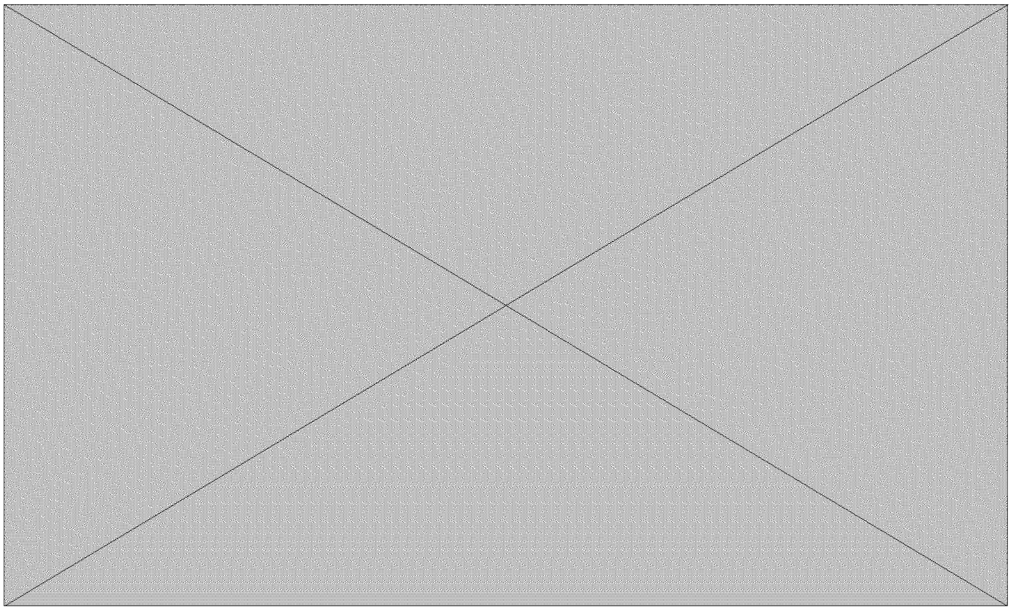
Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.



Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48



Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ___________

Cell: ___________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson Carter Mecher Dr. Eva Lee ________________ Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann ________________
Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

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From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee <eva.evalee. Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR)

<jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar
Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson
Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
rdarling@patronusmedical.com
https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

> We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.
>
> Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days

priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian. wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

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From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher
Cc:
Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN

Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK,

SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar

Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson

Brian Benson <brian.

Dr. Eva K Lee <evalee-

Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png
>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO);

Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher [redacted] wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

---

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric
<Eric.McDonald@sdcounty.ca.gov>; Carter
Mecher Richard Tubb
Rob Darling,
MD <rdarling@patronusmedical.com>; William
Lang <wlang@worldclinic.com>; Mecher,
Carter <Carter.Mecher@va.gov>; Tom Bossert
Richard Hatchett
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MothersheadtJerry L.
Brian Benson
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Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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To: Carter
Cc: Caneva, Duane[duane.caneva@hq.dhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva

eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@HHS.GOV]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]
From: Dr. Eva K
Sent: Wed 3/18/2020 3:34:11 PM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March

Carter, it is very hard to slam the brake for Italy unless they can pour in the extra beds/medical resources. I am still trying to untangle my thousands of graphs. Once I can select which ones to show, you can see immediatley why all these come together.

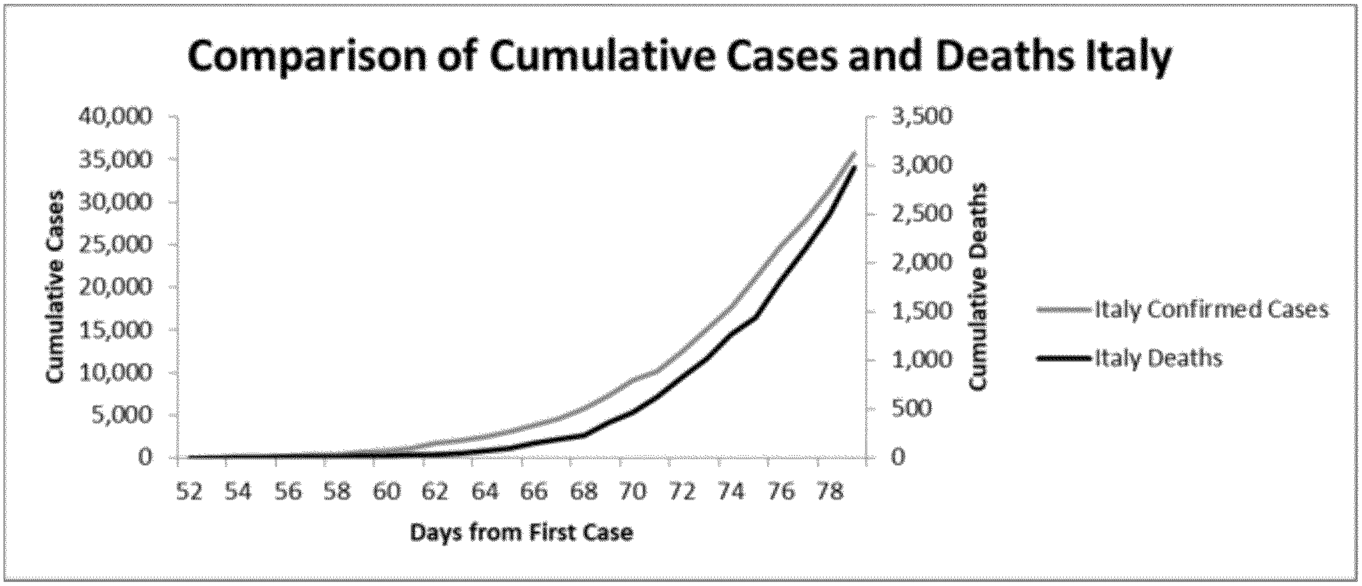
Singapore and Hobg Kong are seeing increase too, because now so many sources are coming in. So the global effect is felt to the greatest extent.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 3:24 PM, Carter Mecher wrote:

Italy is still accelerating.



Sent from Mail for Windows 10

From: Carter Mecher
Sent: Wednesday, March 18, 2020 2:33 PM
To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee
Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
Subject: RE: Red Dawn Responding, Start 16 March

Here is preliminary data on the current state of some of the countries in Europe we are following. UK is really exploding. Spain and Italy numbers continue to climb. Italy is now at 2,978 deaths. Italy is now about to overtake Hubei (3,122 total deaths). Will add US and France data later.

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deat
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	1

1-Mar	130	2	84		1,694	34	73	1
2-Mar	191	3	120		2,036	52	99	6
3-Mar	212	4	151		2,502	79	103	6
4-Mar	285	4	202		3,089	107	154	11
5-Mar	423	7	248	1	3,858	148	197	12
6-Mar	613	9	517	10	4,636	197	309	15
7-Mar	949	16	613	17	5,833	233	434	19
8-Mar	1,126	19	848	25	7,375	366	544	22
9-Mar	1,412	30	1,231	30	9,172	463	728	27
10-Mar	1,784	33	1,646	35	10,149	631	1,010	31
11-Mar	2,281	49	2,277	55	12,462	827	1,311	38
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	40
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	48
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	58

15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	69
16-Mar	6,633	148						87
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423	108
18-Mar			13,716	533	35,713	2,978		

Sent from Mail for Windows 10

From: Carter Mecher
Sent: Wednesday, March 18, 2020 2:21 PM
To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee
Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
Subject: RE: Red Dawn Responding, Start 16 March

Just some updates. First NYC. NYC seeing explosive growth in cases and deaths. See story below. Prevalence is much higher than numbers suggest to already have 20 deaths and have 5/1,300 attendees to a conference last week (0.4%) confirmed to have COVID.

5 doctors test positive for coronavirus after attending a meeting in NYC om March 8-11. Roughly 1,300 physicians and educators traveled from across the country and Canada for a Midtown assembly organized by the Council of Residency Directors (CORD) in Emergency Medicine, opening the possibility that hundreds of emergency room doctors have been exposed to the disease.

Below is a summary of NY State and NYC numbers

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	1		1
4-Mar	10		1
5-Mar	19		3
6-Mar	40		4
7-Mar	78		11
8-Mar	105		12
9-Mar	142		19

10-Mar	173		36
11-Mar	216		52
12-Mar	325		95
13-Mar	524		213
14-Mar	613	1	269
15-Mar	729	5	329
16-Mar	950	7	453
17-Mar	1,374	12	644
18-Mar	2,382	20	1,339

Sent from Mail for Windows 10

From: Caneva, Duane
Sent: Wednesday, March 18, 2020 1:52 PM
To: Tracey McNamara; Dr. Eva K Lee; Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV);

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Subject: RE: Red Dawn Responding, Start 16 March

DHS Science and Technology Master Question List most recent version attached and available here: https://www.dhs.gov/publication/st-master-question-list-covid-19

For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

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From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Wednesday, March 18, 2020 1:21 PM
To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).

https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 10:09 AM
To: Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/

mobile:

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------- Original Message -------

On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

> I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).
>
> I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.

https://newton.isye.gatech.edu/DrLee/

mobile:

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------- Original Message -------

On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:

Some update on screening and testing -

1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.

2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/

mobile:

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------- Original Message -------

On Wednesday, March 18, 2020 12:12 PM, Carter Mecher
wrote:

> Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.
>
> I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have

an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPORTED BY SENTIN											
YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	NUM. OF PROVIDERS	UNW
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	2,907	1
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	2,938	1
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	2,962	1
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	2,992	1
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	3,003	2
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	3,018	2
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	2,986	2
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	2,981	2
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	2,990	3
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	2,986	3

2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	2,947	3
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	2,917	5
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	2,906	7
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	2,949	6
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	2,976	5
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	2,967	5
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	2,966	6
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	2,956	6
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	2,960	7
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	2,916	6
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	2,914	5
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	2,826	5
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	2,625	5

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)

Sent: Wednesday, March 18, 2020 11:27 AM

To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we’re left w/ clinicians being confronted w/ Sophie’s choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher

Sent: Tuesday, March 17, 2020 7:42 PM

To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>

Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee <eva.evalee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato,

Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jar	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Fe	
	France (65M)		Spain (47M)		Italy (60M)		US (330	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cu
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	

25-Feb	14	1	7		322	11	57
26-Feb	18	2	13		453	12	60
27-Feb	38	2	23		655	17	60
28-Feb	57	2	32		889	21	63
29-Feb	100	2	45		1,128	29	68
1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	103
4-Mar	285	4	202		3,089	107	154
5-Mar	423	7	248	1	3,858	148	197
6-Mar	613	9	517	10	4,636	197	309
7-Mar	949	16	613	17	5,833	233	434
8-Mar	1,126	19	848	25	7,375	366	544
9-Mar	1,412	30	1,231	30	9,172	463	728

10-Mar	1,784	33	1,646	35	10,149	631	1,010
11-Mar	2,281	49	2,277	55	12,462	827	1,311
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*

Sent from Mail for Windows 10

From: Brian Benson

Sent: Tuesday, March 17, 2020 3:10 PM

To: Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

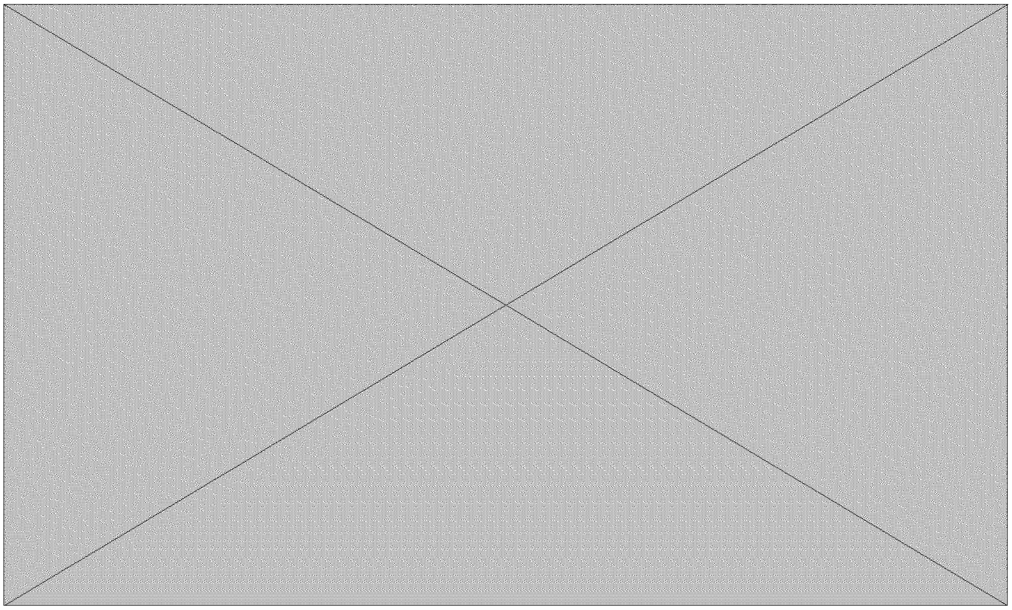
See Germano article he sent below.

Channels

[ ][]

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48



Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That’s currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ____________

Cell: ____________

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Tuesday, March 17, 2020 1:41 PM

To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>

Cc: Brian Benson Carter Mecher Dr. Eva Lee <eva.evalee. Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR)

<Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

Get Outlook for Android

From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome

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Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
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On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee <evalee-

wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian. wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

Get Outlook for Android

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher

Cc:
Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard. Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1

Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1

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Brian Benson
Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David;

CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people

with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

---

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb <bg.richard. Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>;

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Subject: Red Dawn Responding,
Start 16 March

New string. Please use this going forward.

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To: Caneva, Duane[duane.caneva@hq.dhs.gov]; Dr. Eva K Carter Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva

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From: Tracey McNamara[tmcNamara@westernu.edu]
Sent: Wed 3/18/2020 5:01:04 PM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March

https://nypost.com/2020/03/17/first-dog-to-test-positive-for-coronavirus-has-died-in-hong-kong/

Dog in Hong Kong has DIED

From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Sent: Wednesday, March 18, 2020 1:34 PM
To: Dr. Eva K Lee Carter Mecher Tracey McNamara <tmcNamara@westernu.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; D isbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven

Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann Arthur Kellermann <arthur.kellermann@usuhs.edu>; Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>; Cramer, Drew W. EOP/OMB <drew.w.cramer2@omb.eop.gov>
Subject: RE: Red Dawn Responding, Start 16 March

https://www.statnews.com/2020/03/17/a-fiasco-in-the-making-as-the-coronavirus-pandemic-takes-hold-we-are-making-decisions-without-reliable-data/

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 3:34 PM
To:
Subject: RE: Red Dawn Responding, Start 16 March

Carter, it is very hard to slam the brake for Italy unless they can pour in the extra beds/medical resources. I am still trying to untangle my thousands of graphs. Once I can select which ones to show, you can see immediatley why all these come together.

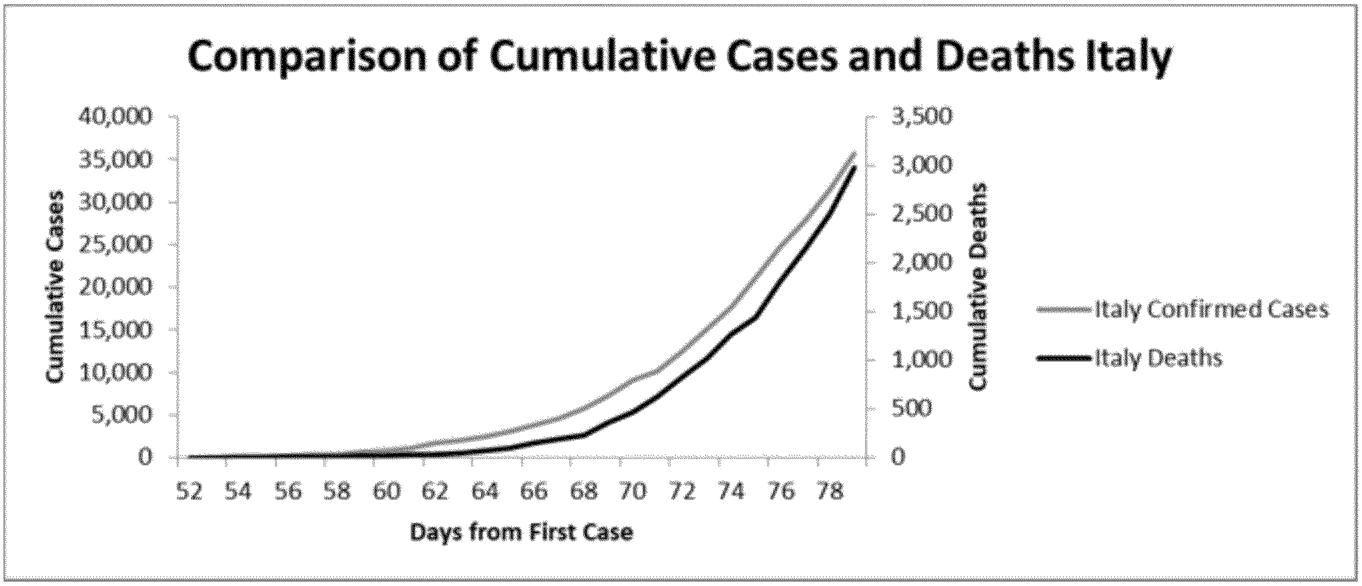
Singapore and Hobg Kong are seeing increase too, because now so many sources are coming in. So the global effect is felt to the greatest extent.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 3:24 PM, Carter Mecher wrote:

Italy is still accelerating.



Sent from Mail for Windows 10

From: Carter Mecher
Sent: Wednesday, March 18, 2020 2:33 PM
To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee
Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
Subject: RE: Red Dawn Responding, Start 16 March

Here is preliminary data on the current state of some of the countries in Europe we are following. UK is really exploding. Spain and Italy numbers continue to climb. Italy is now at 2,978 deaths. Italy is now about to overtake Hubei (3,122 total deaths). Will add US and France data later.

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deat
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	

29-Feb	100	2	45		1,128	29	68	1
1-Mar	130	2	84		1,694	34	73	1
2-Mar	191	3	120		2,036	52	99	6
3-Mar	212	4	151		2,502	79	103	6
4-Mar	285	4	202		3,089	107	154	11
5-Mar	423	7	248	1	3,858	148	197	12
6-Mar	613	9	517	10	4,636	197	309	15
7-Mar	949	16	613	17	5,833	233	434	19
8-Mar	1,126	19	848	25	7,375	366	544	22
9-Mar	1,412	30	1,231	30	9,172	463	728	27
10-Mar	1,784	33	1,646	35	10,149	631	1,010	31
11-Mar	2,281	49	2,277	55	12,462	827	1,311	38
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	40
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	48
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	58
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	69
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	87
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423	108
18-Mar			13,716	533	35,713	2,978		

Sent from Mail for Windows 10

From: Carter Mecher
Sent: Wednesday, March 18, 2020 2:21 PM
To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee
Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV);

HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
Subject: RE: Red Dawn Responding, Start 16 March

Just some updates. First NYC. NYC seeing explosive growth in cases and deaths. See story below. Prevalence is much higher than numbers suggest to already have 20 deaths and have 5/1,300 attendees to a conference last week (0.4%) confirmed to have COVID.

5 doctors test positive for coronavirus after attending a meeting in NYC om March 8-11. Roughly 1,300 physicians and educators traveled from across the country and Canada for a Midtown assembly organized by the Council of Residency Directors (CORD) in Emergency Medicine, opening the possibility that hundreds of emergency room doctors have been exposed to the disease.

Below is a summary of NY State and NYC numbers

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	1		1
4-Mar	10		1
5-Mar	19		3
6-Mar	40		4
7-Mar	78		11
8-Mar	105		12
9-Mar	142		19
10-Mar	173		36
11-Mar	216		52
12-Mar	325		95
13-Mar	524		213

14-Mar	613	1	269
15-Mar	729	5	329
16-Mar	950	7	453
17-Mar	1,374	12	644
18-Mar	2,382	20	1,339

Sent from Mail for Windows 10

From: Caneva, Duane
Sent: Wednesday, March 18, 2020 1:52 PM
To: Tracey McNamara; Dr. Eva K Lee; Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
Subject: RE: Red Dawn Responding, Start 16 March

DHS Science and Technology Master Question List most recent version attached and available here: https://www.dhs.gov/publication/st-master-question-list-covid-19

For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

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From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Wednesday, March 18, 2020 1:21 PM
To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).

https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 10:09 AM
To: Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery

<kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

> I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).
>
> I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.
>
> https://newton.isye.gatech.edu/DrLee/
>
> mobile:
>
> Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:

Some update on screening and testing -

1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.

2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:

Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPORTED BY SENTIN											
YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	NUM. OF PROVIDERS	UNW
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	2,907	1
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	2,938	1
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	2,962	1
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	2,992	1
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	3,003	2
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	3,018	2
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	2,986	2
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	2,981	2
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	2,990	3
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	2,986	3
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	2,947	3
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	2,917	5
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	2,906	7

2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	2,949	6
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	2,976	5
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	2,967	5
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	2,966	6
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	2,956	6
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	2,960	7
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	2,916	6
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	2,914	5
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	2,826	5
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	2,625	5

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)

Sent: Wednesday, March 18, 2020 11:27 AM

To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; [redacted] Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; [redacted] Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

“Skate to where the puck~~is going~~ has already gone. “

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher

Sent: Tuesday, March 17, 2020 7:42 PM

To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>

Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee <eva.evalee. Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery

<kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Ja	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Fe	
	France (65M)		Spain (47M)		Italy (60M)		US (330	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cu
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	
1-Mar	130	2	84		1,694	34	73	
2-Mar	191	3	120		2,036	52	99	
3-Mar	212	4	151		2,502	79	103	
4-Mar	285	4	202		3,089	107	154	
5-Mar	423	7	248	1	3,858	148	197	

6-Mar	613	9	517	10	4,636	197	309
7-Mar	949	16	613	17	5,833	233	434
8-Mar	1,126	19	848	25	7,375	366	544
9-Mar	1,412	30	1,231	30	9,172	463	728
10-Mar	1,784	33	1,646	35	10,149	631	1,010
11-Mar	2,281	49	2,277	55			
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701
13-Mar				120	17,660	1,266	2,110
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*

Sent from Mail for Windows 10

From: Brian Benson

Sent: Tuesday, March 17, 2020 3:10 PM

To: Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

Channels

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HOME >> CHINA,SPECIAL-COVERAGE

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ____________

Cell: ____________

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Tuesday, March 17, 2020 1:41 PM

To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>

Cc: Brian Benson Carter Mecher Dr. Eva Lee <eva.evalee. Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery

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<jmcleod@patronusmedical.com>; Lauren Johnston
<ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

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From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara
<tmcNamara@westernu.edu>; Carter Mecher
Dr. Eva Lee
Caneva, Duane <duane.caneva@hq.dhs.gov>;
McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb
<bg William Lang
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Tom Bossert Richard Hatchett
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Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
rdarling@patronusmedical.com
https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee <evalee-
wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian. wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized

providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

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From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher

Cc:
Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard. Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert
Richard

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CHRISTOPHER ALLEN
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Brian Benson
Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know

what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

> Worth the read.
>
> https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295
>
> Sent from Mail for Windows 10
>
> **From:**
>
> **Sent:** Monday, March 16, 2020 11:58 PM
>
> **To:** 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett';

'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

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From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

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Eva K Lee <evalee-

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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To: Dr. Eva K Caneva, Duane[duane.caneva@hq.dhs.gov]
Cc: Tracey McNamara[tmcNamara@westernu.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@HHS.GOV]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; D isbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]; Cramer, Drew W. EOP/OMB[drew.w.cramer2@omb.eop.gov]
From: Carter
Sent: Wed 3/18/2020 9:54:23 PM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March

Hotspots—NY, WA, and CA

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	2		2
4-Mar	10		2
5-Mar	19		4
6-Mar	40		7
7-Mar	78		12
8-Mar	105		14
9-Mar	142		25

10-Mar	173		32
11-Mar	216		53
12-Mar	325		88
13-Mar	524		137
14-Mar	613	1	185
15-Mar	729	5	269
16-Mar	950	7	464
17-Mar	1,374	12	923
18-Mar	2,382	20	1,871

	WA State (7.8M)		King County (2.2M)		Snohomish County (0.8M)	
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
21-Jan	1				1	
29-Feb	3		1		2	
1-Mar	6		4	1	2	
2-Mar	18	5	14	5	4	
3-Mar	27	9	21	8	6	1
4-Mar	39	10	31	9	8	1
5-Mar	70	10	51	9	18	1
6-Mar	79	11	58	10	19	1
7-Mar	102	16	71	15	27	1
8-Mar	136	18	83	17	31	1
9-Mar	162	21	116	20	37	1
10-Mar	267	24	190	22	54	1
11-Mar	366	29	234	26	68	2
12-Mar	457	31	270	27	108	3
13-Mar	568	37	328	32	166	4
14-Mar	642	40	387	35	154	4

15-Mar	769	42	420	37	176	4
16-Mar	904	48	488	43	200	4
17-Mar	1,012	52	569	43	254	6
18-Mar	1,187	66	562	56	310	6

	WA State (7.8M)		NYC State (19.4M)		CA State (40M)		US (330M)		Outside CA
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases
29-Feb	3		0				68	1	
1-Mar	6		1				73	1	
2-Mar	18	5	1		43		99	6	37
3-Mar	27	9	2		43		103	6	31
4-Mar	39	10	10				154	11	105
5-Mar	70	10	19		60	1	197	12	
6-Mar	79	11	40		69	1	309	15	121
7-Mar	102	16	78		88	1	434	19	166
8-Mar	136	18	105		114	1	544	22	189
9-Mar	162	21	142		133	1	728	27	291
10-Mar	267	24	173		157	2	1,010	31	413
11-Mar	366	29	216		177	3	1,311	38	552
12-Mar	457	31	325		198	4	1,701	40	721
13-Mar	568	37	524		247	5	2,110	48	771
14-Mar	642	40	613	1	288	5	2,952	58	1,409
15-Mar	769	42	729	5	335	6	3,774	69	1,941
16-Mar	904	48	950	7	392	6	4,661	87	2,415
17-Mar	1,012	52	1,374	12	598	13	6,423	108	3,439
18-Mar	1,187	66	2,382	20	757	13	8,715	138	4,389

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 5:16 PM
To: Caneva, Duane
Cc: Carter Mecher; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Duane, thanks for sending this article. I suppose John is on this group since he talked about many things we have talked about:

0. Diamond Princess as in Carter's analysis (I like Carter's :-)).
1. The 1% infection in US population that I and Carter have been talking about for a long time.
2. Sampling testing within communities (which we have discussed since day 1)
3. He doesn't know or he questions if closing schools works (Ok. I do not agree with him)
4. the flattening of the curve. The famous one shown on all the media is not quite right. It is not theoretically correct. The flattening looks different, but ok.
5. It's true current hospital patients are vulnerable, we all agree and hence we advocate pre-emptive **early** NPI implementation
6. Worrying about kids in the malsl -- I don't think this is like H1N1 anymore. Malls are closing also.
7. Herd immunity. From the analysis, it seems that we will need to get to 49% to 89% among different communities to get herd immunity. In that case, many people will die. The clinicians I talked to today say that the lungs of patients are severely damaged -- not immediately, ususally late in the treatment period, like day 10. And they remain badly damaged even when recovered.
8 This statement --
"That’s another reason we need data about the exact level of the epidemic activity." Really what data? Every data in such type of pandemic will have noise, will not be perfect, and will never be perfect. Even if we are done now, a year from now, we sill won't have perfect data. That is just a fact. if we need perfect date to operate, we won't be operating most of the time. We need to be able to develop robust models that can describe the situation using partial information. It needs not perfect, but **it should provide useful insights to act.**

That's why Carter's, Richard's graphs putting side-by-side on how Italy's data matches China's are so important. Those curves -- they truly do not lie. James said we're 6-8 weeks behind China, we're indeed, as Carter reminds us everyday (almost) with those little graphs. That's why I advocate early intervention, because I assume when I see one case, we're 14 days behind, and we're, as I can see from the models.

That's also why the intervention graphs I show for each city, they need not be perfect, because we only want to see the patterns of changes, and how it changes.

9. Social distancing alone is not sufficient. We need screening, we need testing and we need to intercept new infection (put them in self-quarantine or isolation and contact trace), we need all of them so that we have maintain the infection at a rate to our healthcare systems to treat the sick patients properly.

https://newton.isye.gatech.edu/DrLee/
mobile:

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------- Original Message -------
On Wednesday, March 18, 2020 4:34 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:

https://www.statnews.com/2020/03/17/a-fiasco-in-the-making-as-the-coronavirus-pandemic-takes-hold-we-are-making-decisions-without-reliable-data/

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 3:34 PM
To:
Subject: RE: Red Dawn Responding, Start 16 March

Carter, it is very hard to slam the brake for Italy unless they can pour in the extra beds/medical resources. I am still trying to untangle my thousands of graphs. Once I can select which ones to show, you can see immediatley why all these come together.

Singapore and Hobg Kong are seeing increase too, because now so many sources are coming in. So the global effect is felt to the greatest extent.

https://newton.isye.gatech.edu/DrLee/

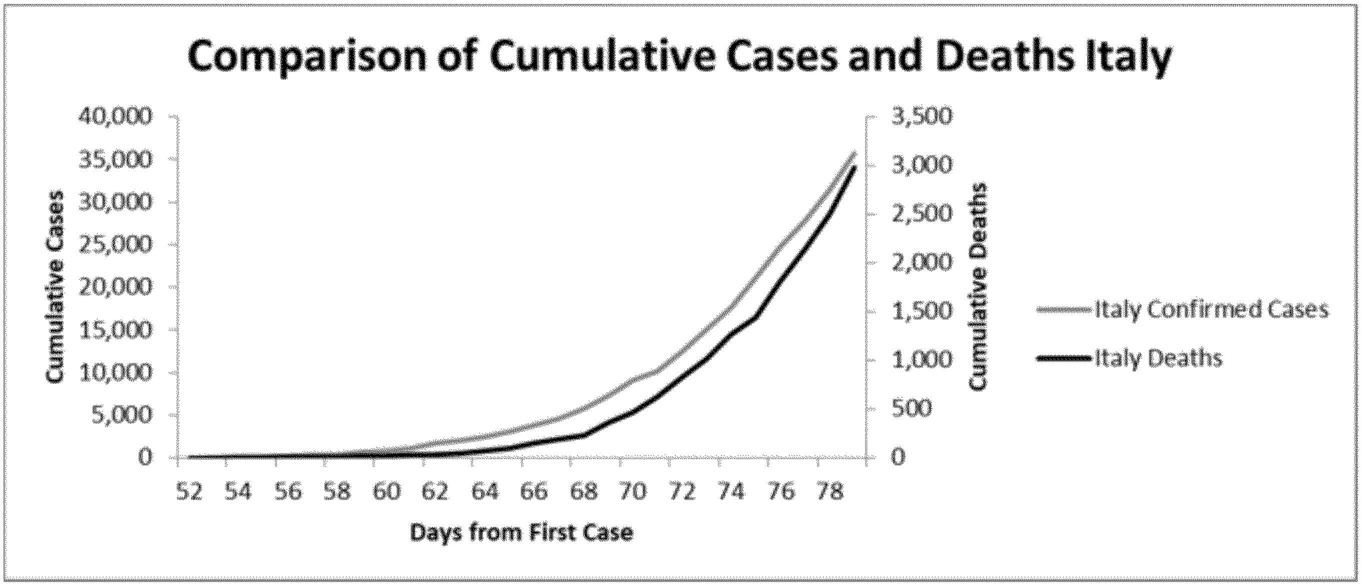
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 3:24 PM, Carter Mecher wrote:

> Italy is still accelerating.



Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:33 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Here is preliminary data on the current state of some of the countries in Europe we are following. UK is really exploding. Spain and Italy numbers continue to climb. Italy is now at 2,978 deaths. Italy is now about to overtake Hubei (3,122 total deaths). Will add US and France data later.

Date of 1st Case	24-Jan	1-Feb	30-Jan	24-Jan

Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum De
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	1
1-Mar	130	2	84		1,694	34	73	1
2-Mar	191	3	120		2,036	52	99	6
3-Mar	212	4	151		2,502	79	103	6
4-Mar	285	4	202		3,089	107	154	11
5-Mar	423	7	248	1	3,858	148	197	12
6-Mar	613	9	517	10	4,636	197	309	15
7-Mar	949	16	613	17	5,833	233	434	19
8-Mar	1,126	19	848	25	7,375	366	544	22
9-Mar	1,412	30	1,231	30	9,172	463	728	27
10-Mar	1,784	33	1,646	35	10,149	631	1,010	31
11-Mar	2,281	49	2,277	55	12,462	827	1,311	38
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	40
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	48

14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	58
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	69
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	87
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423	108
18-Mar			13,716	533	35,713	2,978		

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:21 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Just some updates. First NYC. NYC seeing explosive growth in cases and deaths. See story below. Prevalence is much higher than numbers suggest to already have 20 deaths and have 5/1,300 attendees to a conference last week (0.4%) confirmed to have COVID.

5 doctors test positive for coronavirus after attending a meeting in NYC om March 8-11. Roughly 1,300 physicians and educators traveled from across the country and Canada for a Midtown assembly organized by the Council of Residency Directors (CORD) in Emergency Medicine, opening the possibility that hundreds of emergency room doctors have been exposed to the disease.

Below is a summary of NY State and NYC numbers

	NYC State (19.4M)	NYC (8.6M)

Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	1		1
4-Mar	10		1
5-Mar	19		3
6-Mar	40		4
7-Mar	78		11
8-Mar	105		12
9-Mar	142		19
10-Mar	173		36
11-Mar	216		52
12-Mar	325		95
13-Mar	524		213
14-Mar	613	1	269
15-Mar	729	5	329
16-Mar	950	7	453
17-Mar	1,374	12	644
18-Mar	2,382	20	1,339

Sent from Mail for Windows 10

From: Caneva, Duane

Sent: Wednesday, March 18, 2020 1:52 PM

To: Tracey McNamara; Dr. Eva K Lee; Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

DHS Science and Technology Master Question List most recent version attached and available here: https://www.dhs.gov/publication/st-master-question-list-covid-19

For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Wednesday, March 18, 2020 1:21 PM

To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).

https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee

Sent: Wednesday, March 18, 2020 10:09 AM

To: Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

> I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).
>
> I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.
>
> https://newton.isye.gatech.edu/DrLee/
>
> mobile:
>
> Sent with ProtonMail Secure Email.
>
> ------- Original Message -------
>
> On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee
> wrote:
>
>> Some update on screening and testing -
>>
>> 1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.
>>
>> 2. Attached is update on rapid risk-assessment screening and diagnostic

testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:

> Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.
>
> I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of

providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPORTED BY SE										
YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	NUM. OF PROVIDERS
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	2,907
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	2,938
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	2,962
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	2,992
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	3,003
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	3,018
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	2,986
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	2,981
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	2,990
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	2,986
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	2,947
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	2,917
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	2,906
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	2,949
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	2,976
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	2,967
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	2,966
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	2,956

2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	2,960
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	2,916
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	2,914
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	2,826
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	2,625

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)

Sent: Wednesday, March 18, 2020 11:27 AM

To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher

Sent: Tuesday, March 17, 2020 7:42 PM

To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>

Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee <eva.evalee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-
	France (65M)		Spain (47M)		Italy (60M)		US (3
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases
20-Feb	12	1	2		3	0	15
21-Feb	12	1	2		20	1	35
22-Feb	12	1	2		63	2	35
23-Feb	12	1	2		155	3	35
24-Feb	12	1	3		229	7	53
25-Feb	14	1	7		322	11	57
26-Feb	18	2	13		453	12	60
27-Feb	38	2	23		655	17	60
28-Feb	57	2	32		889	21	63
29-Feb	100	2	45		1,128	29	68
1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	103
4-Mar	285	4	202		3,089	107	154
5-Mar	423	7	248	1	3,858	148	197
6-Mar	613	9	517	10	4,636	197	309
7-Mar	949	16	613	17	5,833	233	434
8-Mar	1,126	19	848	25	7,375	366	544
9-Mar	1,412	30	1,231	30	9,172	463	728
10-Mar	1,784	33	1,646	35	10,149	631	1,010

11-Mar	2,281	49	2,277	55	12,462	827	1,311
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*

Sent from Mail for Windows 10

From: Brian Benson

Sent: Tuesday, March 17, 2020 3:10 PM

To: Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; [redacted] Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; [redacted] Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

Channels

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Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times
Published: 2020/2/29 0:33:48

369

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan

reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ___________

Cell: ___________

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Tuesday, March 17, 2020 1:41 PM

To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>

Cc: Brian Benson Carter Mecher Dr. Eva Lee 1974usna@gmail.com; Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb <bg William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN

Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

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From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee <eva.evalee.lee64@gmail.com>; Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander

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Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
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a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee <evalee-
wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian. wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamar

a@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

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From: Dr. Eva Lee <eva.evalee.lee64@gmail.com>
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher

Cc:

Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard.

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Dr. Eva K Lee <evalee-

Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical

reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher

wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F87 42CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA97 1E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc:

Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN;

Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris)

(OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic

wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; jamison.day@gmail.com; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David';

'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian

Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

---

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher

>; Richard Tubb <bg.richard.tubb@gmail.com>; Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert

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Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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To: Carter
Cc: Dr. Eva K Caneva, Duane[duane.caneva@hq.dhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; D isbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]; Cramer, Drew W. EOP/OMB[drew.w.cramer2@omb.eop.gov]
From: William Lang[wlang@worldclinic.com]
Sent: Thur 3/19/2020 12:26:34 AM (UTC-04:00)
Subject: Re: Red Dawn Responding, Start 16 March

Can anyone comment on the NYT article today noting a higher than expected number of hospitalizations in younger people? The article acknowledges that there is no information on comorbidities in the data, but still a huge question and if true and not related to comorbidities, undermines much of what many have been communicating to groups. Could it be that our message is getting out to the at-risk groups and they are self protecting much more effectively, so what we are seeing is not a change in hospitalization rates by age group, but just higher infection rates in younger ages because they are not being as cautious (maybe too much to hope).
Thanks

-Bill

William L. Lang, MD, MHA
Medical Director
email: wlang@worldclinic.com

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On Mar 18, 2020, at 9:54 PM, Carter Mecher wrote:

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Hotspots—NY, WA, and CA

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	2		2
4-Mar	10		2
5-Mar	19		4
6-Mar	40		7
7-Mar	78		12
8-Mar	105		14
9-Mar	142		25
10-Mar	173		32
11-Mar	216		53
12-Mar	325		88
13-Mar	524		137
14-Mar	613	1	185
15-Mar	729	5	269
16-Mar	950	7	464
17-Mar	1,374	12	923
18-Mar	2,382	20	1,871

	WA State (7.8M)	King County (2.2M)	Snohomish County (0.8M)

Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
21-Jan	1				1	
29-Feb	3		1		2	
1-Mar	6		4	1	2	
2-Mar	18	5	14	5	4	
3-Mar	27	9	21	8	6	1
4-Mar	39	10	31	9	8	1
5-Mar	70	10	51	9	18	1
6-Mar	79	11	58	10	19	1
7-Mar	102	16	71	15	27	1
8-Mar	136	18	83	17	31	1
9-Mar	162	21	116	20	37	1
10-Mar	267	24	190	22	54	1
11-Mar	366	29	234	26	68	2
12-Mar	457	31	270	27	108	3
13-Mar	568	37	328	32	166	4
14-Mar	642	40	387	35	154	4
15-Mar	769	42	420	37	176	4
16-Mar	904	48	488	43	200	4
17-Mar	1,012	52	569	43	254	6
18-Mar	1,187	66	562	56	310	6

	WA State (7.8M)		NYC State (19.4M)		CA State (40M)		US (330M)		Outside C
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Case
29-Feb	3		0				68	1	
1-Mar	6		1				73	1	
2-Mar	18	5	1		43		99	6	37
3-Mar	27	9	2		43		103	6	31

4-Mar	39	10	10				154	11	105
5-Mar	70	10	19		60	1	197	12	
6-Mar	79	11	40		69	1	309	15	121
7-Mar	102	16	78		88	1	434	19	166
8-Mar	136	18	105		114	1	544	22	189
9-Mar	162	21	142		133	1	728	27	291
10-Mar	267	24	173		157	2	1,010	31	413
11-Mar	366	29	216		177	3	1,311	38	552
12-Mar	457	31	325		198	4	1,701	40	721
13-Mar	568	37	524		247	5	2,110	48	771
14-Mar	642	40	613	1	288	5	2,952	58	1,409
15-Mar	769	42	729	5	335	6	3,774	69	1,941
16-Mar	904	48	950	7	392	6	4,661	87	2,415
17-Mar	1,012	52	1,374	12	598	13	6,423	108	3,439
18-Mar	1,187	66	2,382	20	757	13	8,715	138	4,389

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 5:16 PM
To: Caneva, Duane
Cc: Carter Mecher; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Duane, thanks for sending this article. I suppose John is on this group since he talked about many things we have talked about:

0. Diamond Princess as in Carter's analysis (I like Carter's :-)).

1. The 1% infection in US population that I and Carter have been talking about for a long time.
2. Sampling testing within communities (which we have discussed since day 1)
3. He doesn't know or he questions if closing schools works (Ok. I do not agree with him)
4. the flattening of the curve. The famous one shown on all the media is not quite right. It is not theoretically correct. The flattening looks different, but ok.
5. It's true current hospital patients are vulnerable, we all agree and hence we advocate pre-emptive **early** NPI implementation
6. Worrying about kids in the malsl -- I don't think this is like H1N1 anymore. Malls are closing also.
7. Herd immunity. From the analysis, it seems that we will need to get to 49% to 89% among different communities to get herd immunity. In that case, many people will die. The clinicians I talked to today say that the lungs of patients are severely damaged -- not immediately, ususally late in the treatment period, like day 10. And they remain badly damaged even when recovered.
8 This statement --
"That's another reason we need data about the exact level of the epidemic activity." Really what data? Every data in such type of pandemic will have noise, will not be perfect, and will never be perfect. Even if we are done now, a year from now, we sill won't have perfect data. That is just a fact. if we need perfect date to operate, we won't be operating most of the time. We need to be able to develop robust models that can describe the situation using partial information. It needs not perfect, but **it should provide useful insights to act.**

That's why Carter's, Richard's graphs putting side-by-side on how Italy's data matches China's are so important. Those curves -- they truly do not lie. James said we're 6-8 weeks behind China, we're indeed, as Carter reminds us everyday (almost) with those little graphs. That's why I advocate early intervention, because I assume when I see one case, we're 14 days behind, and we're, as I can see from the models.

That's also why the intervention graphs I show for each city, they need not be perfect, because we only want to see the patterns of changes, and how it changes.

9. Social distancing alone is not sufficient. We need screening, we need testing and we need to intercept new infection (put them in self-quarantine or isolation and contact trace), we need all of them so that we have maintain the infection at a rate to our healthcare systems to treat the sick patients properly.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 4:34 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:

https://www.statnews.com/2020/03/17/a-fiasco-in-the-making-as-the-coronavirus-pandemic-takes-hold-we-are-making-decisions-without-reliable-data/

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 3:34 PM
To:
Subject: RE: Red Dawn Responding, Start 16 March

Carter, it is very hard to slam the brake for Italy unless they can pour in the extra beds/medical resources. I am still trying to untangle my thousands of graphs. Once I can select which ones to show, you can see immediatley why all these come together.

Singapore and Hobg Kong are seeing increase too, because now so many sources are coming in. So the global effect is felt to the greatest extent.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 3:24 PM, Carter Mecher wrote:

Italy is still accelerating.

<image001.png>

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:33 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay

J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Here is preliminary data on the current state of some of the countries in Europe we are following. UK is really exploding. Spain and Italy numbers continue to climb. Italy is now at 2,978 deaths. Italy is now about to overtake Hubei (3,122 total deaths). Will add US and France data later.

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	
1-Mar	130	2	84		1,694	34	73	
2-Mar	191	3	120		2,036	52	99	
3-Mar	212	4	151		2,502	79	103	
4-Mar	285	4	202		3,089	107	154	
5-Mar	423	7	248	1	3,858	148	197	

6-Mar	613	9	517	10	4,636	197	309
7-Mar	949	16	613	17	5,833	233	434
8-Mar	1,126	19	848	25	7,375	366	544
9-Mar	1,412	30	1,231	30	9,172	463	728
10-Mar	1,784	33	1,646	35	10,149	631	1,010
11-Mar	2,281	49	2,277	55	12,462	827	1,311
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423
18-Mar			13,716	533	35,713	2,978	

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:21 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; [redacted] eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; [redacted] Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Just some updates. First NYC. NYC seeing explosive growth in cases and deaths. See story below. Prevalence is much higher than numbers suggest to already have 20 deaths and have 5/1,300 attendees to a conference last week (0.4%) confirmed to have COVID.

5 doctors test positive for coronavirus after attending a meeting in NYC om March 8-11. Roughly 1,300 physicians and educators traveled from across the country and Canada for a Midtown assembly organized by the Council of Residency Directors (CORD) in Emergency Medicine, opening the possibility that hundreds of emergency room doctors have been exposed to the disease.

Below is a summary of NY State and NYC numbers

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	1		1
4-Mar	10		1
5-Mar	19		3
6-Mar	40		4
7-Mar	78		11
8-Mar	105		12
9-Mar	142		19
10-Mar	173		36
11-Mar	216		52
12-Mar	325		95
13-Mar	524		213
14-Mar	613	1	269
15-Mar	729	5	329
16-Mar	950	7	453
17-Mar	1,374	12	644

18-Mar	2,382	20	1,339

Sent from Mail for Windows 10

From: Caneva, Duane

Sent: Wednesday, March 18, 2020 1:52 PM

To: Tracey McNamara; Dr. Eva K Lee; Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

DHS Science and Technology Master Question List most recent version attached and available here: https://www.dhs.gov/publication/st-master-question-list-covid-19

For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Wednesday, March 18, 2020 1:21 PM

To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).

https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee

Sent: Wednesday, March 18, 2020 10:09 AM

To: Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD

<adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

> I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).
>
> I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.
>
> https://newton.isye.gatech.edu/DrLee/
>
> mobile:
>
> Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee <evalee-
wrote:

Some update on screening and testing -

1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.

2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:

Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of

care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPORTED										
YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	NUM PROVI
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	2,9
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	2,9
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	2,9
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	2,9
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	3,0

2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	3,0
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	2,9
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	2,9
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	2,9
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	2,9
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	2,9
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	2,9
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	2,9
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	2,9
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	2,9
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	2,9
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	2,9
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	2,9
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	2,9
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	2,9
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	2,9
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	2,8
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	2,6

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)

Sent: Wednesday, March 18, 2020 11:27 AM

To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David;

CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher

Sent: Tuesday, March 17, 2020 7:42 PM

To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>

Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee <eva.evalee. Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>;

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Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		1
Date of 1st Death	15-Feb		4-Mar		21-Feb		2
	France (65M)		Spain (47M)		Italy (60M)		US
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cas
20-Feb	12	1	2		3	0	15
21-Feb	12	1	2		20	1	35
22-Feb	12	1	2		63	2	35
23-Feb	12	1	2		155	3	35
24-Feb	12	1	3		229	7	53
25-Feb	14	1	7		322	11	57
26-Feb	18	2	13		453	12	60

27-Feb	38	2	23		655	17	60
28-Feb	57	2	32		889	21	63
29-Feb	100	2	45		1,128	29	68
1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	103
4-Mar	285	4	202		3,089	107	154
5-Mar	423	7	248	1	3,858	148	197
6-Mar	613	9	517	10	4,636	197	309
7-Mar	949	16	613	17	5,833	233	434
8-Mar	1,126	19	848	25	7,375	366	544
9-Mar	1,412	30	1,231	30	9,172	463	728
10-Mar	1,784	33	1,646	35	10,149	631	1,010
11-Mar	2,281	49	2,277	55	12,462	827	1,311
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*

Sent from Mail for Windows 10

From: Brian Benson

Sent: Tuesday, March 17, 2020 3:10 PM

To: Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

<image002.jpg>

Channels

[ ][]

<image003.jpg>

HOME >> **CHINA**,**SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha
Source:Global Times Published: 2020/2/29 0:33:48

369

<image004.jpg>

<image005.jpg>

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ___________

Cell: ___________

From: Tracey McNamara
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Sent: Tuesday, March 17, 2020 1:41 PM

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Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

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<image006.jpg>

From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee <eva.evalee.

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Subject: Re: Red Dawn Responding, Start 16
March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

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Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
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On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

> We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara

<tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

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<image007.jpg>

From: Dr. Eva Lee <eva.evalee.lee6

Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher <cmecher@charter.net>
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Brian Benson <brian.benson@icloud.com>; Dr. Eva K Lee <evalee-

Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for

covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher <cmecher@charter.net> wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F

ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: 1974usna@gmail.com; Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett;

Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; jamison.day@

Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED;

jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L;

LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From: 1974usna@gmail.com

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom

Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; jamison.day@gmail.com; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally

(OS/ASPR /SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR /BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR /BARDA)'; 'Redd, John (OS/ASPR /SPPR)'; 'Hassell, David (Chris) (OS/ASPR /IO)'; 'Hamel, Joseph (OS/ASPR /IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR

/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFSt DPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher <cmecher@charter.net>; Richard Tubb <bg.richard.tubb@gmail.com>; Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert <tom.bossert@me.com>; Richard Hatchett <richard.h

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>; jamison.day@gmail.com; Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.

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>; MothersheadtJerry L. <1974USNA@gmail.com>; Brian Benson <brian.benson@icloud.com>; Dr. Eva K Lee <evalee-gatech@pm.me>

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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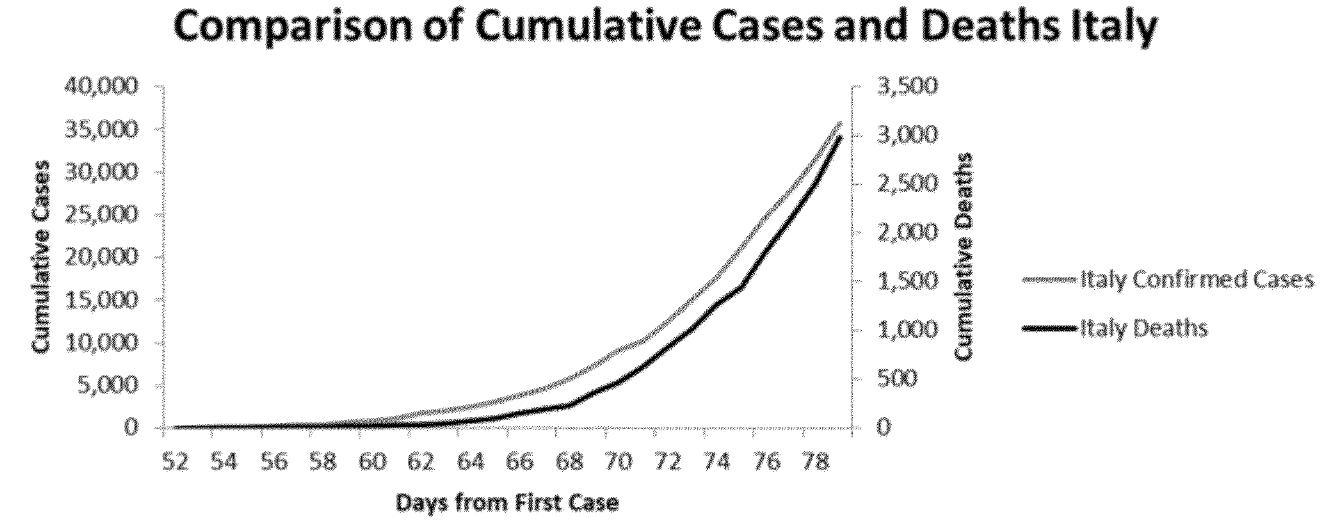
Comparison of Cumulative Cases and Deaths Italy
Cumulative Cases
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
Cumulative Deaths
3,500
3,000
2,500
2,000
1,500
1,000
500
0
52 54 56 58 60 62 64 66 68 70 72 74 76 78
Days from First Case
Italy Confirmed Cases
Italy Deaths

To: William Lang[wlang@worldclinic.com]
Cc: Carter Dr. Eva K Caneva, Duane[duane.caneva@hq.dhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva

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From: Callahan, Michael V.,M.D.[MVCALLAHAN@mgh.harvard.edu]
Sent: Thur 3/19/2020 12:40:38 AM (UTC-04:00)
Subject: Re: Red Dawn Responding, Start 16 March

Odd timing
MGH has 4 and now a 5th 42-54yr old C19 patient intubated at 80-100% and high PEEP. Moderate comorbodies in 2 but the others are clean. There are many more elderly on PPV but these younger patients creep us out. Even with the Chinese cohorts we do not know much about this virus.
Anyone have data?

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital
Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O'Neil Building 6th Floor
Washington, DC

On Mar 19, 2020, at 00:26, William Lang <wlang@worldclinic.com> wrote:

External Email - Use Caution

Can anyone comment on the NYT article today noting a higher than expected number of hospitalizations in younger people? The article acknowledges that there is no information on comorbidities in the data, but still a huge question and if true and not related to comorbidities, undermines much of what many have been communicating to groups. Could it be that our message is getting out to the at-risk groups and they are self protecting much more effectively, so what we are seeing is not a change in hospitalization rates by age group, but just higher infection rates in younger ages because they are not being as cautious (maybe too much to hope).
Thanks

-Bill

William L. Lang, MD, MHA
Medical Director
email: wlang@worldclinic.com

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On Mar 18, 2020, at 9:54 PM, Carter Mecher wrote:

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Hotspots—NY, WA, and CA

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	2		2
4-Mar	10		2
5-Mar	19		4
6-Mar	40		7
7-Mar	78		12

8-Mar	105		14
9-Mar	142		25
10-Mar	173		32
11-Mar	216		53
12-Mar	325		88
13-Mar	524		137
14-Mar	613	1	185
15-Mar	729	5	269
16-Mar	950	7	464
17-Mar	1,374	12	923
18-Mar	2,382	20	1,871

	WA State (7.8M)		King County (2.2M)		Snohomish County (0.8M)	
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
21-Jan	1				1	
29-Feb	3		1		2	
1-Mar	6		4	1	2	
2-Mar	18	5	14	5	4	
3-Mar	27	9	21	8	6	1
4-Mar	39	10	31	9	8	1
5-Mar	70	10	51	9	18	1
6-Mar	79	11	58	10	19	1
7-Mar	102	16	71	15	27	1
8-Mar	136	18	83	17	31	1
9-Mar	162	21	116	20	37	1
10-Mar	267	24	190	22	54	1
11-Mar	366	29	234	26	68	2
12-Mar	457	31	270	27	108	3

13-Mar	568	37	328	32	166	4
14-Mar	642	40	387	35	154	4
15-Mar	769	42	420	37	176	4
16-Mar	904	48	488	43	200	4
17-Mar	1,012	52	569	43	254	6
18-Mar	1,187	66	562	56	310	6

	WA State (7.8M)		NYC State (19.4M)		CA State (40M)		US (330M)		Outsi
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cas
29-Feb	3		0				68	1	
1-Mar	6		1				73	1	
2-Mar	18	5	1		43		99	6	37
3-Mar	27	9	2		43		103	6	31
4-Mar	39	10	10				154	11	105
5-Mar	70	10	19		60	1	197	12	
6-Mar	79	11	40		69	1	309	15	121
7-Mar	102	16	78		88	1	434	19	166
8-Mar	136	18	105		114	1	544	22	189
9-Mar	162	21	142		133	1	728	27	291
10-Mar	267	24	173		157	2	1,010	31	413
11-Mar	366	29	216		177	3	1,311	38	552
12-Mar	457	31	325		198	4	1,701	40	721
13-Mar	568	37	524		247	5	2,110	48	771
14-Mar	642	40	613	1	288	5	2,952	58	1,409
15-Mar	769	42	729	5	335	6	3,774	69	1,941
16-Mar	904	48	950	7	392	6	4,661	87	2,415
17-Mar	1,012	52	1,374	12	598	13	6,423	108	3,439

18-Mar	1,187	66	2,382	20	757	13	8,715	138	4,389

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 5:16 PM
To: Caneva, Duane
Cc: Carter Mecher; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Duane, thanks for sending this article. I suppose John is on this group since he talked about many things we have talked about:

0. Diamond Princess as in Carter's analysis (I like Carter's :-)).
1. The 1% infection in US population that I and Carter have been talking about for a long time.
2. Sampling testing within communities (which we have discussed since day 1)
3. He doesn't know or he questions if closing schools works (Ok. I do not agree with him)
4. the flattening of the curve. The famous one shown on all the media is not quite right. It is not theoretically correct. The flattening looks different, but ok.
5. It's true current hospital patients are vulnerable, we all agree and hence we advocate pre-emptive **early** NPI implementation
6. Worrying about kids in the malsl -- I don't think this is like H1N1 anymore. Malls are closing also.
7. Herd immunity. From the analysis, it seems that we will need to get to 49% to 89% among different communities to get herd immunity. In that case, many people will die. The clinicians I talked to today say that the lungs of patients are severely damaged -- not immediately, ususally late in the treatment period, like day 10. And they remain badly damaged even when recovered.
8 This statement --
"That's another reason we need data about the exact level of the epidemic activity." Really what data? Every data in such type of pandemic will have noise, will not be perfect, and will never be perfect. Even if we are done now, a year from now, we sill won't have perfect data. That is just a fact. if we need perfect date to operate, we won't be operating most of the time. We need to be able to develop robust models that can describe the situation using partial information. It needs not perfect, but **it should provide useful insights to act.**

That's why Carter's, Richard's graphs putting side-by-side on how Italy's data matches China's are so important. Those curves -- they truly do not lie. James said we're 6-8 weeks behind China, we're indeed, as Carter reminds us everyday (almost) with those little graphs. That's why I advocate early intervention, because I assume when I see one case, we're 14 days behind, and we're, as I can see from the models.

That's also why the intervention graphs I show for each city, they need not be perfect, because we only want to see the patterns of changes, and how it changes.

9. Social distancing alone is not sufficient. We need screening, we need testing and we need to intercept new infection (put them in self-quarantine or isolation and contact trace), we need all of them so that we have maintain the infection at a rate to our healthcare systems to treat the sick patients properly.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 4:34 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:

https://www.statnews.com/2020/03/17/a-fiasco-in-the-making-as-the-coronavirus-pandemic-takes-hold-we-are-making-decisions-without-reliable-data/

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 3:34 PM
To:
Subject: RE: Red Dawn Responding, Start 16 March

Carter, it is very hard to slam the brake for Italy unless they can pour in the extra beds/medical resources. I am still trying to untangle my thousands of graphs. Once I can select which ones to show, you can see immediatley why all these come together.

Singapore and Hobg Kong are seeing increase too, because now so many sources are coming in. So the global effect is felt to the greatest extent.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 3:24 PM, Carter Mecher
wrote:

Italy is still accelerating.

<image001.png>

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:33 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Here is preliminary data on the current state of some of the countries in Europe we are following. UK is really exploding. Spain and Italy numbers continue to climb. Italy is now at 2,978 deaths. Italy is now about to overtake Hubei (3,122 total deaths). Will add US and France data later.

Date of 1st Case	24-Jan	1-Feb	30-Jan	24-Ja
Date of 1st Death	15-Feb	4-Mar	21-Feb	29-Fe
	France (65M)	Spain (47M)	Italy (60M)	US (330

	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cu
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	
1-Mar	130	2	84		1,694	34	73	
2-Mar	191	3	120		2,036	52	99	
3-Mar	212	4	151		2,502	79	103	
4-Mar	285	4	202		3,089	107	154	
5-Mar	423	7	248	1	3,858	148	197	
6-Mar	613	9	517	10	4,636	197	309	
7-Mar	949	16	613	17	5,833	233	434	
8-Mar	1,126	19	848	25	7,375	366	544	
9-Mar	1,412	30	1,231	30	9,172	463	728	
10-Mar	1,784	33	1,646	35	10,149	631	1,010	
11-Mar	2,281	49	2,277	55	12,462	827	1,311	
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	

16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423	
18-Mar			13,716	533	35,713	2,978		

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:21 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Just some updates. First NYC. NYC seeing explosive growth in cases and deaths. See story below. Prevalence is much higher than numbers suggest to already have 20 deaths and have 5/1,300 attendees to a conference last week (0.4%) confirmed to have COVID.

5 doctors test positive for coronavirus after attending a meeting in NYC om March 8-11. Roughly 1,300 physicians and educators traveled from across the country and Canada for a Midtown assembly organized by the Council of Residency Directors (CORD) in Emergency Medicine, opening the possibility that hundreds of emergency room doctors have been exposed to the disease.

Below is a summary of NY State and NYC numbers

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0

1-Mar	1		1
2-Mar	1		1
3-Mar	1		1
4-Mar	10		1
5-Mar	19		3
6-Mar	40		4
7-Mar	78		11
8-Mar	105		12
9-Mar	142		19
10-Mar	173		36
11-Mar	216		52
12-Mar	325		95
13-Mar	524		213
14-Mar	613	1	269
15-Mar	729	5	329
16-Mar	950	7	453
17-Mar	1,374	12	644
18-Mar	2,382	20	1,339

Sent from Mail for Windows 10

From: Caneva, Duane

Sent: Wednesday, March 18, 2020 1:52 PM

To: Tracey McNamara; Dr. Eva K Lee; Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS;

mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

DHS Science and Technology Master Question List most recent version attached and available here: https://www.dhs.gov/publication/st-master-question-list-covid-19

For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Wednesday, March 18, 2020 1:21 PM

To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).

https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee

Sent: Wednesday, March 18, 2020 10:09 AM

To: Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).

I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:

Some update on screening and testing -

1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.

2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on

the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:

> Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.
>
> I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed

at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPOR										
YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	P
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	

2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)

Sent: Wednesday, March 18, 2020 11:27 AM

To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David;

CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher

Sent: Tuesday, March 17, 2020 7:42 PM

To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>

Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee <eva.evalee. Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>;

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Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		
Date of 1st Death	15-Feb		4-Mar		21-Feb		
	France (65M)		Spain (47M)		Italy (60M)		
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum C
20-Feb	12	1	2		3	0	15
21-Feb	12	1	2		20	1	35
22-Feb	12	1	2		63	2	35
23-Feb	12	1	2		155	3	35
24-Feb	12	1	3		229	7	53
25-Feb	14	1	7		322	11	57

26-Feb	18	2	13		453	12	60
27-Feb	38	2	23		655	17	60
28-Feb	57	2	32		889	21	63
29-Feb	100	2	45		1,128	29	68
1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	10
4-Mar	285	4	202		3,089	107	15
5-Mar	423	7	248	1	3,858	148	19
6-Mar	613	9	517	10	4,636	197	30
7-Mar	949	16	613	17	5,833	233	43
8-Mar	1,126	19	848	25	7,375	366	54
9-Mar	1,412	30	1,231	30	9,172	463	72
10-Mar	1,784	33	1,646	35	10,149	631	1,0
11-Mar	2,281	49	2,277	55	12,462	827	1,3
12-Mar	2,876	61	3,059	86	15,113	1,016	1,7
13-Mar	3,661	79	4,209	120	17,660	1,266	2,1
14-Mar	4,499	91	5,841	191	21,157	1,441	2,9
15-Mar	5,423	127	7,753	288	24,747	1,809	3,7
16-Mar	6,633	148	9,942	342	27,980	2,158	4,6
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,2*

Sent from Mail for Windows 10

From: Brian Benson

Sent: Tuesday, March 17, 2020 3:10 PM

To: Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

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HOME >> **CHINA**,**SPECIAL-COVERAGE**

Autopsies offer key clues for early stage

COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

369

<image004.jpg>

<image005.jpg>

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging

Technology Manager

Assistant Secretary for Preparedness and Response

Office: ___________

Cell: ___________

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Tuesday, March 17, 2020 1:41 PM

To: Dr. Eva K Lee <evalee-
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Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

Get Outlook for Android

<image006.jpg>

From: Rob Darling, MD
<rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020
10:21:53 AM
To: Dr. Eva K Lee <evalee-

Cc: Brian Benson
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Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
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https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-

0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee <evalee-
wrote:

> We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.
>
> Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-

14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian.
wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatie

nt clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take

the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Wh

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From: Dr. Eva Lee <eva.evalee.lee64@gmail.com>
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher <cmecher@charter.net>
Cc: 1974usna@gmail.com <1974usna@gmail

.com>; Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard.tubb@gmail.com>; Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wl

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Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.

Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO

) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(t CHFSt DPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.go

v>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CT

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<brian.benson@icloud.com>; Dr. Eva K Lee <evalee-gatech@pm.me>
Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can**

act and act quickly. TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine.

We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tent

s appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher <cmecher@chart

er.n
et>
wro
te:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

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It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

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It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. EvaL

ee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: 197

4usna@gmail.com; Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Da

rling, MD;

William Lang;

Mecher, Carter; Tom Bossert, Richard Hatchett, L

awler, James V.; Parker Jr, Gerald W.; Hanfling, Dan; Gruber, David (DSHS

);CHRISTOPHER ALLEN;jamison.day@gmail.com;Borio, Luciana;Tracey Mc

Namara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, TH

OMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STA

TE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeB

ord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew JC

IVUSARMY(USA); L is a Koonin; HARVEY, MELISSA; WOLFE, HERBERT, Ea

stman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Rob

ert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARD

A); Redd, John (OS/ASPR/SPPR);

Hassell, David (Chris) (OS/ASPR/IO);

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amel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVIDA; KAUSH

IK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); LarryG, RyanMorhard, Stev

en Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fa

ntinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jero

me (CTR); Schnitzer, Jay J.; Ignacio, Joselito;

Will Gaskins;

Kevin Montg

omery; Logan, Linda L.; Logandakar; Venkayya, Rajeev; Ronny Jacks

on; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Sta

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Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-

risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

evalee-

https://newton.isye.gatech.edu/DrLee/

mobile: 404-432-6835

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher <cmecher@charter.net> wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb';

'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; jamison 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee <eva.evalee.lee64@gmail.com>; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>;

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SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott
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<Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH)
<steven.stack@ky.gov>; Adams, Jerome (HHS/OASH)
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<rajeev.venkayya@takeda.com>; Ronny Jackson
MothersheadtJerry L.
<1974USNA@gmail.com>; Brian Benson
Dr. Eva K Lee

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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To: William Lang[wlang@worldclinic.com]
Cc: Carter Dr. Eva K Caneva, Duane[duane.caneva@hq.dhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Dr. Eva eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; D isbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]; Cramer, Drew W. EOP/OMB[drew.w.cramer2@omb.eop.gov]; Pam Hughes[phughes@patronusmedical.com]; Wine GC[gcwine@patronusmedical.com]; Lee Sagert[lsagert@patronusmedical.com]; Kerri Wright[kwright@patronusmedical.com]; Kenneth Dominicana[kprado@patronusmedical.com]; Demetrie Munroe[dmunro@patronusmedical.com]; Dan Carlin[dcarlin@worldclinic.com]
From: Rob Darling, MD[rdarling@patronusmedical.com]
Sent: Thur 3/19/2020 12:42:04 AM (UTC-04:00)
Subject: Re: Red Dawn Responding, Start 16 March

I suspect a major factor will in fact be that young people are ignoring social distancing recommendations but there are probably other factors. .

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:

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rdarling@patronusmedical.com
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On Thu, Mar 19, 2020 at 12:26 AM William Lang <wlang@worldclinic.com> wrote:

Can anyone comment on the NYT article today noting a higher than expected number of hospitalizations in younger people? The article acknowledges that there is no information on comorbidities in the data, but still a huge question and if true and not related to comorbidities, undermines much of what many have been communicating to groups. Could it be that our message is getting out to the at-risk groups and they are self protecting much more effectively, so what we are seeing is not a change in hospitalization rates by age group, but just higher infection rates in younger ages because they

are not being as cautious (maybe too much to hope).
Thanks

-Bill

William L. Lang, MD, MHA
Medical Director
email: wlang@worldclinic.com

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On Mar 18, 2020, at 9:54 PM, Carter Mecher ____________ wrote:

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Hotspots—NY, WA, and CA

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	2		2
4-Mar	10		2
5-Mar	19		4
6-Mar	40		7
7-Mar	78		12
8-Mar	105		14
9-Mar	142		25
10-Mar	173		32

11-Mar	216		53
12-Mar	325		88
13-Mar	524		137
14-Mar	613	1	185
15-Mar	729	5	269
16-Mar	950	7	464
17-Mar	1,374	12	923
18-Mar	2,382	20	1,871

	WA State (7.8M)		King County (2.2M)		Snohomish County (0.8M)	
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
21-Jan	1				1	
29-Feb	3		1		2	
1-Mar	6		4	1	2	
2-Mar	18	5	14	5	4	
3-Mar	27	9	21	8	6	1
4-Mar	39	10	31	9	8	1
5-Mar	70	10	51	9	18	1
6-Mar	79	11	58	10	19	1
7-Mar	102	16	71	15	27	1
8-Mar	136	18	83	17	31	1
9-Mar	162	21	116	20	37	1
10-Mar	267	24	190	22	54	1
11-Mar	366	29	234	26	68	2
12-Mar	457	31	270	27	108	3
13-Mar	568	37	328	32	166	4

14-Mar	642	40	387	35	154	4
15-Mar	769	42	420	37	176	4
16-Mar	904	48	488	43	200	4
17-Mar	1,012	52	569	43	254	6
18-Mar	1,187	66	562	56	310	6

	WA State (7.8M)		NYC State (19.4M)		CA State (40M)		US (330M)		Outside
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cas
29-Feb	3		0				68	1	
1-Mar	6		1				73	1	
2-Mar	18	5	1		43		99	6	37
3-Mar	27	9	2		43		103	6	31
4-Mar	39	10	10				154	11	105
5-Mar	70	10	19		60	1	197	12	
6-Mar	79	11	40		69	1	309	15	121
7-Mar	102	16	78		88	1	434	19	166
8-Mar	136	18	105		114	1	544	22	189
9-Mar	162	21	142		133	1	728	27	291
10-Mar	267	24	173		157	2	1,010	31	413
11-Mar	366	29	216		177	3	1,311	38	552
12-Mar	457	31	325		198	4	1,701	40	721
13-Mar	568	37	524		247	5	2,110	48	771
14-Mar	642	40	613	1	288	5	2,952	58	1,409
15-Mar	769	42	729	5	335	6	3,774	69	1,941
16-Mar	904	48	950	7	392	6	4,661	87	2,415
17-Mar	1,012	52	1,374	12	598	13	6,423	108	3,439

18-Mar	1,187	66	2,382	20	757	13			

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 5:16 PM
To: Caneva, Duane
Cc: Carter Mecher; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Duane, thanks for sending this article. I suppose John is on this group since he talked about many things we have talked about:

0. Diamond Princess as in Carter's analysis (I like Carter's :-)).

1. The 1% infection in US population that I and Carter have been talking about for a long time.

2. Sampling testing within communities (which we have discussed since day 1)

3. He doesn't know or he questions if closing schools works (Ok. I do not agree with him)

4. the flattening of the curve. The famous one shown on all the media is not quite right. It is not theoretically correct. The flattening looks different, but ok.

5. It's true current hospital patients are vulnerable, we all agree and hence we advocate pre-emptive **early** NPI implementation

6. Worrying about kids in the malsl -- I don't think this is like H1N1 anymore. Malls are closing also.

7. Herd immunity. From the analysis, it seems that we will need to get to 49% to 89% among different communities to get herd immunity. In that case, many people will die. The clinicians I talked to today say that the lungs of patients are severely damaged -- not immediately, ususally late in the treatment period, like day 10. And they remain badly damaged even when recovered.

8 This statement --
"That's another reason we need data about the exact level of the epidemic activity." Really what data? Every data in such

type of pandemic will have noise, will not be perfect, and will never be perfect. Even if we are done now, a year from now, we sill won't have perfect data. That is just a fact. if we need perfect date to operate, we won't be operating most of the time. We need to be able to develop robust models that can describe the situation using partial information. It needs not perfect, but **it should provide useful insights to act.**

That's why Carter's, Richard's graphs putting side-by-side on how Italy's data matches China's are so important. Those curves -- they truly do not lie. James said we're 6-8 weeks behind China, we're indeed, as Carter reminds us everyday (almost) with those little graphs. That's why I advocate early intervention, because I assume when I see one case, we're 14 days behind, and we're, as I can see from the models.

That's also why the intervention graphs I show for each city, they need not be perfect, because we only want to see the patterns of changes, and how it changes.

9. Social distancing alone is not sufficient. We need screening, we need testing and we need to intercept new infection (put them in self-quarantine or isolation and contact trace), we need all of them so that we have maintain the infection at a rate to our healthcare systems to treat the sick patients properly.

https://newton.isye.gatech.edu/DrLee/

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------- Original Message -------

On Wednesday, March 18, 2020 4:34 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:

https://www.statnews.com/2020/03/17/a-fiasco-in-the-making-as-the-coronavirus-pandemic-takes-hold-we-are-making-decisions-without-reliable-data/

From: Dr. Eva K Lee

Sent: Wednesday, March 18, 2020 3:34 PM

To:

Subject: RE: Red Dawn Responding, Start 16 March

Carter, it is very hard to slam the brake for Italy unless they can pour in the extra beds/medical resources. I am still trying to untangle my thousands of graphs. Once I can select which ones to show, you can see immediatley why all these come together.

Singapore and Hobg Kong are seeing increase too, because now so many sources are coming in. So the global effect is felt to the greatest extent.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 3:24 PM, Carter Mecher wrote:

> Italy is still accelerating.
>
> <image001.png>
>
> Sent from Mail for Windows 10
>
> ---
>
> **From:** Carter Mecher
>
> **Sent:** Wednesday, March 18, 2020 2:33 PM
>
> **To:** Caneva, Duane; Tracey McNamara; Dr. Eva K Lee
>
> **Cc:** Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David

(Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Here is preliminary data on the current state of some of the countries in Europe we are following. UK is really exploding. Spain and Italy numbers continue to climb. Italy is now at 2,978 deaths. Italy is now about to overtake Hubei (3,122 total deaths). Will add US and France data later.

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	
1-Mar	130	2	84		1,694	34	73	
2-Mar	191	3	120		2,036	52	99	
3-Mar	212	4	151		2,502	79	103	

4-Mar	285	4	202		3,089	107	154	
5-Mar	423	7	248	1	3,858	148	197	
6-Mar	613	9	517	10	4,636	197	309	
7-Mar	949	16	613	17	5,833	233	434	
8-Mar	1,126	19	848	25	7,375	366	544	
9-Mar	1,412	30	1,231	30	9,172	463	728	
10-Mar	1,784	33	1,646	35	10,149	631	1,010	
11-Mar	2,281	49	2,277	55	12,462	827	1,311	
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	
13-Mar	3,661	79						
14-Mar	4,499	91						
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	
16-Mar	6,633	148						
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423	
18-Mar			13,716	533	35,713	2,978		

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:21 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven

Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Just some updates. First NYC. NYC seeing explosive growth in cases and deaths. See story below. Prevalence is much higher than numbers suggest to already have 20 deaths and have 5/1,300 attendees to a conference last week (0.4%) confirmed to have COVID.

5 doctors test positive for coronavirus after attending a meeting in NYC om March 8-11. Roughly 1,300 physicians and educators traveled from across the country and Canada for a Midtown assembly organized by the Council of Residency Directors (CORD) in Emergency Medicine, opening the possibility that hundreds of emergency room doctors have been exposed to the disease.

Below is a summary of NY State and NYC numbers

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	1		1
4-Mar	10		1
5-Mar	19		3
6-Mar	40		4
7-Mar	78		11
8-Mar	105		12
9-Mar	142		19
10-Mar	173		36
11-Mar	216		52
12-Mar	325		95
13-Mar	524		213
14-Mar	613	1	269
15-Mar	729	5	329

16-Mar	950	7	453
17-Mar	1,374	12	644
18-Mar	2,382	20	1,339

Sent from Mail for Windows 10

From: Caneva, Duane

Sent: Wednesday, March 18, 2020 1:52 PM

To: Tracey McNamara; Dr. Eva K Lee; Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

DHS Science and Technology Master Question List most recent version attached and available here: https://www.dhs.gov/publication/st-master-question-list-covid-19

For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

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From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Wednesday, March 18, 2020 1:21 PM

To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).

https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee

Sent: Wednesday, March 18, 2020 10:09 AM

To: Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee <eva.evalee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb <bg.richard William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>;

Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).

I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee <evalee-
wrote:

Some update on screening and testing -

1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.

2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:12 PM, Carter Mecher
wrote:

Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPORTED										
YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	NUM PROV
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	2,9

2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	2,9
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	2,9
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	2,9
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	3,0
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	3,0
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	2,9
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	2,9
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	2,9
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	2,9
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	2,9
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	2,9
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	2,9
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	2,9
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	2,9
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	2,9
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	2,9
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	2,9
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	2,9
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	2,9
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	2,9
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	2,8
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	2,6

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)

Sent: Wednesday, March 18, 2020 11:27 AM

To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher

Sent: Tuesday, March 17, 2020 7:42 PM

To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>

Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee <eva.evalee. Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb <bg.richard William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		
Date of 1st Death	15-Feb		4-Mar		21-Feb		
	France (65M)		Spain (47M)		Italy (60M)		US
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cas
20-Feb	12	1	2		3	0	15
21-Feb	12	1	2		20	1	35
22-Feb	12	1	2		63	2	35
23-Feb	12	1	2		155	3	35

24-Feb	12	1	3		229	7	53
25-Feb	14	1	7		322	11	57
26-Feb	18	2	13		453	12	60
27-Feb	38	2	23		655	17	60
28-Feb	57	2	32		889	21	63
29-Feb	100	2	45		1,128	29	68
1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	103
4-Mar	285	4	202		3,089	107	154
5-Mar	423	7	248	1	3,858	148	197
6-Mar	613	9	517	10	4,636	197	309
7-Mar	949	16	613	17	5,833	233	434
8-Mar	1,126	19	848	25	7,375	366	544
9-Mar	1,412	30	1,231	30	9,172	463	728
10-Mar	1,784	33	1,646	35	10,149	631	1,010
11-Mar	2,281	49	2,277	55	[illegible]	[illegible]	[illegible]
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*

Sent from Mail for Windows 10

From: Brian Benson

Sent: Tuesday, March 17, 2020 3:10 PM

To: Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

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Channels

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HOME >> **CHINA**,**SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha
Source:Global Times Published: 2020/2/29 0:33:48

369

<image004.jpg>

<image005.jpg>

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ___________

Cell: ___________

From: Tracey McNamara
<tmcNamara@westernu.edu>

Sent: Tuesday, March 17, 2020 1:41 PM

To: Dr. Eva K Lee
Rob Darling, MD
<rdarling@patronusmedical.com>

Cc: Brian Benson
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Dr. Eva Lee
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Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

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<image006.jpg>

From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard.tubb@gmail.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH

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Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
rdarling@patronusmedical.com
https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

> We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more

focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare

workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

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<image007.jpg>

From: Dr. Eva Lee <eva.evalee.lee

>
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher <cmecher@charter.net>
Cc: 1974usna@gmail.com <1974usna@gmail.com>; Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard.tub

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Dr. Eva K Lee
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>
Subject: Re:
Red Dawn
Responding,
Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher <cmecher@charter.net> wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

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It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

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It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now

unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: 1974usna@gmail.com; Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; jamison.day

Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard

(OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR);

Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From: 1974usna@gmail.com

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald

W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; jamison.day@gmail.com; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord, Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV

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'Hassell,
David
(Chris)
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'Hamel,
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'TARAN
TINO,
DAVID
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'KAUSHI
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SANGEE
TA'; 'Lee,
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R/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher <cmecher@charter.net>; Richard Tubb <bg.richard.tubb@gmail.com>; Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert <tom.bossert@me.

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Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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Cc: Carter Caneva, Duane[duane.caneva@hq.dhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; D isbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]; Cramer, Drew W. EOP/OMB[drew.w.cramer2@omb.eop.gov]
From: Dr. Eva K
Sent: Thur 3/19/2020 12:59:01 AM (UTC-04:00)
Subject: Re: Red Dawn Responding, Start 16 March

This is a study from CDC

CDC analysis shows coronavirus poses serious risk for younger people

https://thehill.com/policy/healthcare/488325-cdc-data-show-coronavirus-poses-serious-risk-for-younger-people

I am not sure if this group has adopted the notion that younger people are protected. I don't think so. China's younger generation is conspiciously smaller due to the one-child policy for so many years. Hence I maintain they have a disporportional (smaller) number of younger population.than in US or other countries in order for us to compare their disease status.

The Diamond Princess shows similar attack rate of young vs the elderly. So we cannot tell if indeed the young fares better. This CDC study supports that the younger generation can be seriously affected by covid-19. And I do believe it remains a serious health risk to those with co-existing health conditions, any age. We simply don't know much detail.

We can't let the herd immunity to play out -- many people will die. I will share some graphs tonight.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Thursday, March 19, 2020 12:26 AM, William Lang <wlang@worldclinic.com> wrote:

Can anyone comment on the NYT article today noting a higher than expected number of hospitalizations in younger people? The article acknowledges that there is no information on comorbidities in the data, but still a huge question and if true and not related to comorbidities, undermines much of what many have been communicating to groups. Could it be that our message is getting out to the at-risk groups and they are self protecting much more effectively, so what we are seeing is not a change in hospitalization rates by age group, but just higher infection rates in younger ages because they are not being as cautious (maybe too much to hope).

Thanks

-Bill

William L. Lang, MD, MHA
Medical Director
email: wlang@worldclinic.com

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On Mar 18, 2020, at 9:54 PM, Carter Mecher wrote:

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hotspots—NY, WA, and CA

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0

1-Mar	1		1
2-Mar	1		1
3-Mar	2		2
4-Mar	10		2
5-Mar	19		4
6-Mar	40		7
7-Mar	78		12
8-Mar	105		14
9-Mar	142		25
10-Mar	173		32
11-Mar	216		53
12-Mar	325		88
13-Mar	524		137
14-Mar	613	1	185

15-Mar	729	5	269
16-Mar	950	7	464
17-Mar	1,374	12	923
18-Mar	2,382	20	1,871

	WA State (7.8M)		King County (2.2M)		Snohomish County (0.8M)	
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
21-Jan	1				1	
29-Feb	3		1		2	
1-Mar	6		4	1	2	
2-Mar	18	5	14	5	4	
3-Mar	27	9	21	8	6	1
4-Mar	39	10	31	9	8	1
5-Mar	70	10	51	9	18	1

6-Mar	79	11	58	10	19	1
7-Mar	102	16	71	15	27	1
8-Mar	136	18	83	17	31	1
9-Mar	162	21	116	20	37	1
10-Mar	267	24	190	22	54	1
11-Mar	366	29	234	26	68	2
12-Mar	457	31	270	27	108	3
13-Mar	568	37	328	32	166	4
14-Mar	642	40	387	35	154	4
15-Mar	769	42	420	37	176	4
16-Mar	904	48	488	43	200	4
17-Mar	1,012	52	569	43	254	6
18-Mar	1,187	66	562	56	310	6

	WA State (7.8M)		NYC State (19.4M)		CA State (40M)		US (330M)		Outsid
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases
29-Feb	3		0				68	1	
1-Mar	6		1				73	1	
2-Mar	18	5	1		43		99	6	37
3-Mar	27	9	2		43		103	6	31
4-Mar	39	10	10				154	11	105
5-Mar	70	10	19		60	1	197	12	
6-Mar	79	11	40		69	1	309	15	121
7-Mar	102	16	78		88	1	434	19	166
8-Mar	136	18	105		114	1	544	22	189
9-Mar	162	21	142		133	1	728	27	291
10-Mar	267	24	173		157	2	1,010	31	413
11-Mar	366	29	216		177	3	1,311	38	552

12-Mar	457	31	325		198	4	1,701	40	721
13-Mar	568	37	524		247	5	2,110	48	771
14-Mar	642	40	613	1	288	5	2,952	58	1,409
15-Mar	769	42	729	5	335	6	3,774	69	1,941
16-Mar	904	48	950	7	392	6	4,661	87	2,415
17-Mar	1,012	52	1,374	12	598	13	6,423	108	3,439
18-Mar	1,187	66	2,382	20	757	13	8,715	138	4,389

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 5:16 PM
To: Caneva, Duane
Cc: Carter Mecher; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Duane, thanks for sending this article. I suppose John is on this group since he talked about many things we have talked about:

0. Diamond Princess as in Carter's analysis (I like Carter's :-)).

1. The 1% infection in US population that I and Carter have been talking about for a long time.

2. Sampling testing within communities (which we have discussed since day 1)

3. He doesn't know or he questions if closing schools works (Ok. I do not agree with him)

4. the flattening of the curve. The famous one shown on all the media is not quite right. It is not theoretically correct. The flattening looks different, but ok.

5. It's true current hospital patients are vulnerable, we all agree and hence we advocate pre-emptive **early** NPI implementation

6. Worrying about kids in the malsl -- I don't think this is like H1N1 anymore. Malls are closing also.

7. Herd immunity. From the analysis, it seems that we will need to get to 49% to 89% among different communities to get herd immunity. In that case, many people will die. The clinicians I talked to today say that the lungs of patients are severely damaged -- not immediately, ususally late in the treatment period, like day 10. And they remain badly damaged even when recovered.

8 This statement --
"That's another reason we need data about the exact level of the epidemic activity." Really what data? Every data in such type of pandemic will have noise, will not be perfect, and will never be perfect. Even if we are done now, a year from now, we sill won't have perfect data. That is just a fact. if we need perfect date to operate, we won't be operating most of the time. We need to be able to develop robust models that can describe the situation using partial information. It needs not perfect, but **it should provide useful insights to act.**

That's why Carter's, Richard's graphs putting side-by-side on how Italy's data matches China's are so important. Those curves -- they truly do not lie. James said we're 6-8 weeks behind China, we're indeed, as Carter reminds us everyday (almost) with those little graphs. That's why I advocate early intervention, because I assume when I see one case, we're 14 days behind, and we're, as I can see from the models.

That's also why the intervention graphs I show for each city, they need not be perfect, because we only want to see the patterns of changes, and how it changes.

9. Social distancing alone is not sufficient. We need screening, we need testing and we need to intercept new infection (put them in self-quarantine or isolation and contact trace), we need all of them so that we have maintain the infection at a rate to our healthcare systems to treat the sick patients properly.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 4:34 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:

https://www.statnews.com/2020/03/17/a-fiasco-in-the-making-as-the-coronavirus-pandemic-takes-hold-we-are-making-decisions-without-reliable-data/

From: Dr. Eva K Lee

Sent: Wednesday, March 18, 2020 3:34 PM

To:

Subject: RE: Red Dawn Responding, Start 16 March

Carter, it is very hard to slam the brake for Italy unless they can pour in the extra beds/medical resources. I am still trying to untangle my thousands of graphs. Once I can select which ones to show, you can see immediatley why all these come together.

Singapore and Hobg Kong are seeing increase too, because now so many sources are coming in. So the global effect is felt to the greatest extent.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 3:24 PM, Carter Mecher
wrote:

> Italy is still accelerating.
>
> <image001.png>

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:33 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Here is preliminary data on the current state of some of the countries in Europe we are following. UK is really exploding. Spain and Italy numbers continue to climb. Italy is now at 2,978 deaths. Italy is now about to overtake Hubei (3,122 total deaths). Will add US and France

data later.

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Ja	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Fe	
	France (65M)		Spain (47M)		Italy (60M)		US (330	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cu
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	

29-Feb	100	2	45		1,128	29	68
1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	103
4-Mar	285	4	202		3,089	107	154
5-Mar	423	7	248	1	3,858	148	197
6-Mar	613	9	517	10	4,636	197	309
7-Mar	949	16	613	17	5,833	233	434
8-Mar	1,126	19	848	25	7,375	366	544
9-Mar	1,412	30	1,231	30	9,172	463	728
10-Mar	1,784	33	1,646	35	10,149	631	1,010
11-Mar	2,281	49	2,277	55	12,462	827	1,311
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110

14-Mar	4,499	91	5,841	191	21,157	1,441	2,952
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423
18-Mar			13,716	533	35,713	2,978	

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:21 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Just some updates. First NYC. NYC seeing explosive growth in cases and deaths.   See story below. Prevalence is much higher than numbers suggest to already have 20 deaths and have 5/1,300 attendees to a conference last week (0.4%) confirmed to have COVID.

5 doctors test positive for coronavirus after attending a meeting in NYC om March 8-11. Roughly 1,300 physicians and educators traveled from across the country and Canada for a Midtown assembly organized by the Council of Residency Directors (CORD) in Emergency Medicine, opening the possibility that hundreds of emergency room doctors have been exposed to the disease.

Below is a summary of NY State and NYC numbers

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	1		1
4-Mar	10		1
5-Mar	19		3
6-Mar	40		4
7-Mar	78		11

8-Mar	105		12
9-Mar	142		19
10-Mar	173		36
11-Mar	216		52
12-Mar	325		95
13-Mar	524		213
14-Mar	613	1	269
15-Mar	729	5	329
16-Mar	950	7	453
17-Mar	1,374	12	644
18-Mar	2,382	20	1,339

Sent from Mail for Windows 10

From: Caneva, Duane

Sent: Wednesday, March 18, 2020 1:52 PM

To: Tracey McNamara; Dr. Eva K Lee; Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

DHS Science and Technology Master Question List most recent version attached and available here: https://www.dhs.gov/publication/st-master-question-list-covid-19

For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Wednesday, March 18, 2020 1:21 PM

To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).

https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee

Sent: Wednesday, March 18, 2020 10:09 AM

To: Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb

William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).

I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:

Some update on screening and testing -

1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.

2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:

Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA

except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPOR

YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	P
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	

2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851

2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)

Sent: Wednesday, March 18, 2020 11:27 AM

To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher

Sent: Tuesday, March 17, 2020 7:42 PM

To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>

Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee <eva.evalee. Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David

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Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		
Date of 1st Death	15-Feb		4-Mar		21-Feb		
	France (65M)		Spain (47M)		Italy (60M)		
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum C
20-Feb	12	1	2		3	0	15

21-Feb	12	1	2		20	1	35
22-Feb	12	1	2		63	2	35
23-Feb	12	1	2		155	3	35
24-Feb	12	1	3		229	7	53
25-Feb	14	1	7		322	11	57
26-Feb	18	2	13		453	12	60
27-Feb	38	2	23		655	17	60
28-Feb	57	2	32		889	21	63
29-Feb	100	2	45		1,128	29	68
1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	10
4-Mar	285	4	202		3,089	107	15
5-Mar	423	7	248	1	3,858	148	19

6-Mar	613	9	517	10	4,636	197	30
7-Mar	949	16	613	17	5,833	233	43
8-Mar	1,126	19	848	25	7,375	366	54
9-Mar	1,412	30	1,231	30	9,172	463	72
10-Mar	1,784	33	1,646	35	10,149	631	1,0
11-Mar	2,281	49	2,277	55	12,462	827	1,3
12-Mar	2,876	61	3,059	86	15,113	1,016	1,7
13-Mar	3,661	79	4,209	120	17,660	1,266	2,1
14-Mar	4,499	91	5,841	191	21,157	1,441	2,9
15-Mar	5,423	127	7,753	288	24,747	1,809	3,7
16-Mar	6,633	148	9,942	342	27,980	2,158	4,6
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,2*

Sent from Mail for Windows 10

From: Brian Benson

Sent: Tuesday, March 17, 2020 3:10 PM

To: Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

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HOME >> **CHINA**,**SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha
Source:Global Times Published: 2020/2/29 0:33:48

369

<image004.jpg>

<image005.jpg>

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ____________

Cell: ____________

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Tuesday, March 17, 2020 1:41 PM

To: Dr. Eva K Lee <evalee- Rob Darling, MD <rdarling@patronusmedical.com>

Cc: Brian Benson
<brian.
Carter Mecher
Dr. Eva
Lee

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Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

Get Outlook for Android

<image006.jpg>

From: Rob Darling, MD
<rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee <evalee-

Cc: Brian Benson
<brian.
Tracey McNamara
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Carter Mecher

Dr. Eva Lee

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Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:

Fax:

Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/

rdarling@patronusmedical.com

https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee <evalee- wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began

ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian.
wrote:

Group, is it wise to stop all Non-essential medical personn

el from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It

may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has

asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all

assets to the table, this is it.

Tracey

Get [Outlook for Android]

<image007.jpg>

From: Dr. Eva Lee <eva.evalee.lee64@gmail.com>
Sent: Tuesday, March 17, 2020 7:03

:58 AM
To: Carter Mecher <cmecher@charter.net>
Cc: 1974usna@gmail.com <1974usna@gmail.com>; Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.

richard.tubb@gmail.com>; Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert <tom.bossert@me.com>; Richard Hat

chett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber, David (DSHS) <David.Gruber@dshs.te

xas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_10@msn.com>; jamison.day@gmail.com <jamison.day@gmail.com>; Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu

>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh

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eev.venkayya@takeda.com>; Ronny Jackson <ronny.jacksonmd@gmail.com>; Brian Benson <brian.benson@icloud.com>; Dr. Eva K Lee <evalee-gatech@pm.me>
Subject: Re: Red Dawn Responding, Start 16 Mar

ch

Cart er, this truly frigh tens me. one case is one too man y, **I hop e poli tical lead ers can act and act quic kly.** TW e mus t do so or else we can't help thes e othe r citie s that are esca late d so rapi dly. And glob

ally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16.

And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple

fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher <cmecher@charter.net> wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders,

public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

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>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

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It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee
Sent: Tues

day, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: 1974usna@gmai

l.com, Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD;

William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James

V; Parker Jr, Gerald W; Hanfling, Dan; Gruber, David (DSHS); CHRISTOP

HERALLEN; jamison.day@gmail.com; Borio, Luciana; TraceyMcNamara; Ba

ric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D

.; David.;CharitytA@CDPH; GregoryJ; Walters,William(STATE.GOV); H

AMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin

(OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR);

Matthew J CIV USARMY (

USA); Lisa Koonin;

HARVEY, MELISSA;

WOLFE, HERBERT; Eastman, Alexa

nder;EVANS, MARIEFRED.;jwleduc@utmb.edu;Johnson, Robert (OS/ASP

R/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, Jo

hn (OS/ASPR/SPPR);

Hassell, David (Chris) (OS/ASPR/IO);

Hamel, Josep

h(OS/ASPR/IO); Wade, David; TARANTINO, DAVIDA; KAUSHIK, SANGEE

TA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt (tCHFSt

DPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Je

ssica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Sc

hnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Log

an, LindaL; LLogandakar; Venkayya, Rajeev, RonnyJackson, BrianBe

nson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

—

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

evalee-

https://newton.isye.gatech.edu/DrLee/

mobile: 404-432-6835

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher <cmecher@charter.net> wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; jamison 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher
Richard Tubb
Rob Darling, MD <rdarling@patronusmedical.com>; William Lang
<wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>;
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Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee
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DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips,
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<lkoonin1 HARVEY, MELISSA
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<John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO)
<David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO)
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MothersheadtJerry L.
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Dr. Eva K Lee

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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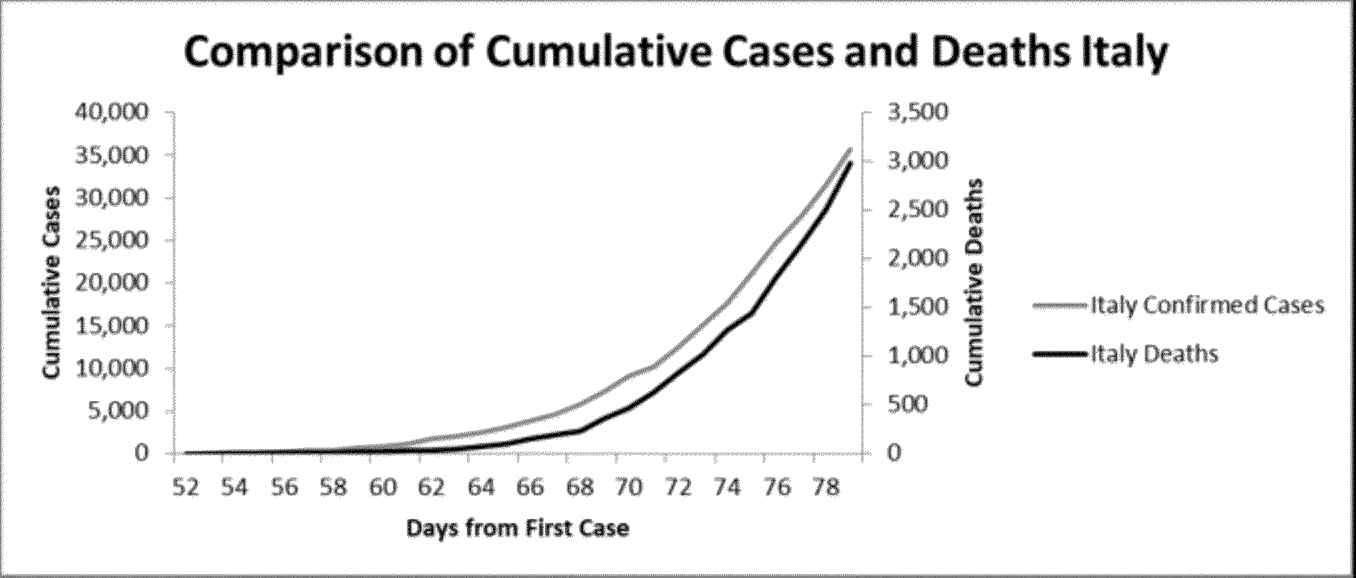

Comparison of Cumulative Cases and Deaths Italy
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Cumulative Deaths
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Days from First Case
Italy Confirmed Cases
Italy Deaths

To: Dr. Eva K William Lang[wlang@worldclinic.com]
Cc: Caneva, Duane[duane.caneva@hq.dhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva

eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; D isbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]; Cramer, Drew W. EOP/OMB[drew.w.cramer2@omb.eop.gov]
From: Carter
Sent: Thur 3/19/2020 7:07:01 AM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March
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Have been curious about projected demand in ICU care and how well initial forecasts projected the increase in actual demand. Italy recently published their experience thru March 7 with projections to March 20 (about 2 weeks later)

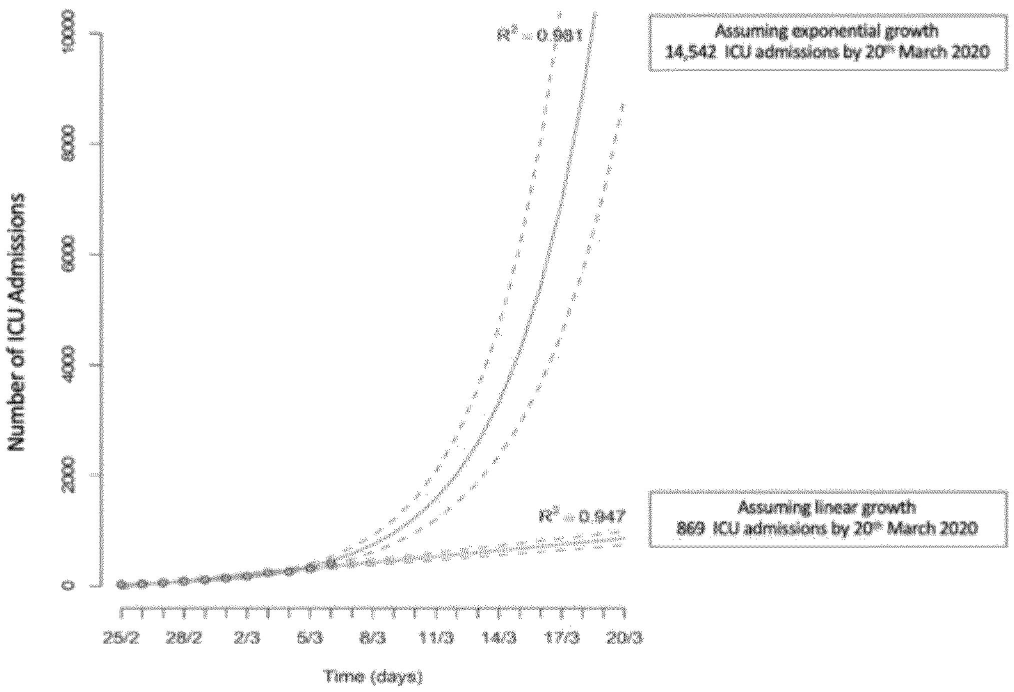
Italy published a paper in JAMA
March 13, 2020

Critical Care Utilization for the COVID-19 Outbreak in Lombardy, Italy Early Experience and Forecast During an Emergency Response

Giacomo Grasselli, MD[1,2]; Antonio Pesenti, MD[1,2]; Maurizio Cecconi, MD[3]

Forecasting ICU Demand Over the Next 2 Weeks
During the first 3 days of the outbreak, starting from February 22, the ICU admissions were 11, 15, and 20 in the COVID-19 Lombardy ICU Network. ICU admissions have increased continuously and exponentially over the first 2 weeks. Based on data to March 7, when 556 COVID-19–positive ICU patients had been admitted to hospitals over the previous 15 days, linear and exponential models were created to estimate further ICU demand (eFigure in the Supplement).

eFigure. Linear and Exponential Models Were Fitted to the Number of ICU Admissions to March 20, 2020



The predicted number of ICU admissions on March 20, 2020, was estimated to be 869 (95%CI: 744-995) with the linear model and was estimated to be 14 542 (95%CI: 8856-23 879) the exponential model. The linear growth rate was estimated to be 36.5 per day (95%CI: 30.0-43.0). The exponential growth rate was estimated to be 0.246 per day (95%CI: 0.221-0.272).

Figure courtesy of Stefano Merler, Bruno Kessler Foundation, Trento, Italy, Epilab-JRU, FEM-FBK Joint Research Unit, Province of Trento, Italy.

They had data thru March 7 and extrapolated ICU demand (admissions) thru March 20. They projected linear growth and exponential growth. We have been tracking the daily updates from Italy and following the reported number of patients in the ICU. [China reported current census of hospitalized patients and critically ill patients; we assumed that the data from Italy was similar (census and not cumulative admissions.] On the March 7, that number reported by Italy was 567, In the JAMA article, the authors state that 556 C19 ICU patients had been admitted. So the numbers are close. If the numbers reported are ICU census numbers (a snapshot), then these numbers are an underestimate of ICU admissions. No data is available on ICU discharges/transfers. If we assumed that the majority of deaths occurred in the ICU, then a high end approximation of ICU admissions would equal the sum of ICU census and deaths (this would assume all deaths occurred in the ICU). On March 7, that sum was 800. On March 18, that sum was 5,235 (2,257 in ICU).

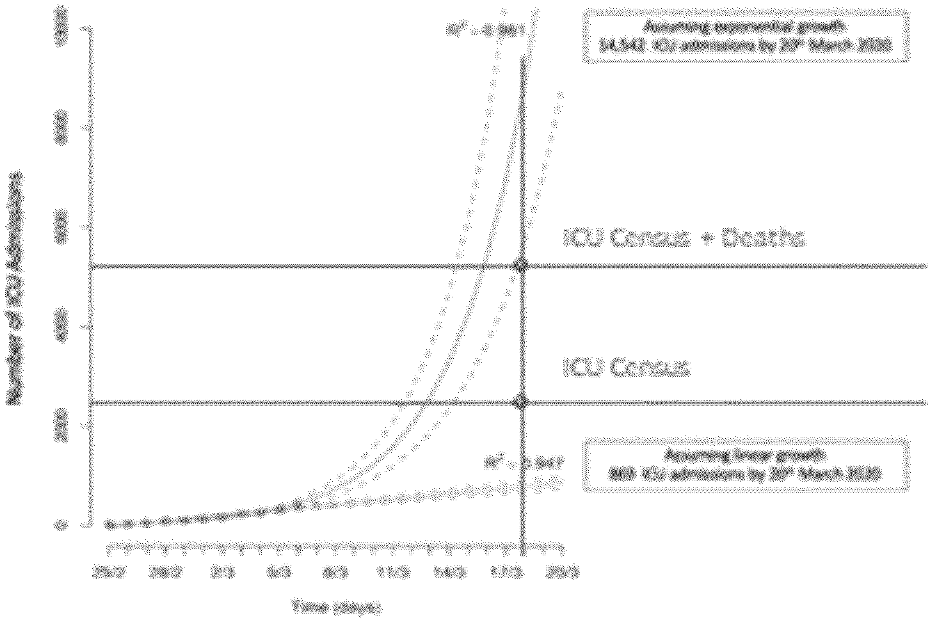
Below are the numbers of what actually occurred thru March 18.

Italy				
Date	Cum Deaths	Cum Confirmed	Critical Condition (ICU)	Sum Deaths + ICU
30-Jan	0	2		0
31-Jan	0	2		0
7-Feb	0	3		0
20-Feb	0	3	2	2

21-Feb	1	20	6	7
22-Feb	2	63	7	9
23-Feb	3	155	26	29
24-Feb	7	229	23	30
25-Feb	11	322	19	30
26-Feb	12	453		12
27-Feb	17	655		17
28-Feb	21	889	64	85
29-Feb	29	1,128	105	134
1-Mar	34	1,694	140	174
2-Mar	52	2,036	166	218
3-Mar	79	2,502		
4-Mar	107	3,089	295	402
5-Mar	148	3,858	351	499
6-Mar	197	4,636	462	659
7-Mar	233	5,833	567	800
8-Mar	366	7,375	650	1,016
9-Mar	463	9,172	733	1,196
10-Mar	631	10,149	877	1,508
11-Mar	827	12,264	1,028	1,855
12-Mar	1,016	15,113	1,153	2,169
13-Mar	1,266	17,660	1,328	2,594
14-Mar	1,441	21,157	1,518	2,959
15-Mar	1,809	24,747	1,672	3,481
16-Mar	2,158	27,980	1,851	4,009
17-Mar	2,503	31,506	2,060	4,563
18-Mar	2,978	35,713	2,257	5,235

So here is where Italy is as of March 18. Given that a significant % of deaths (but not all) would be expected to have occurred in the ICU, the ICU admission curve lies between these two points.

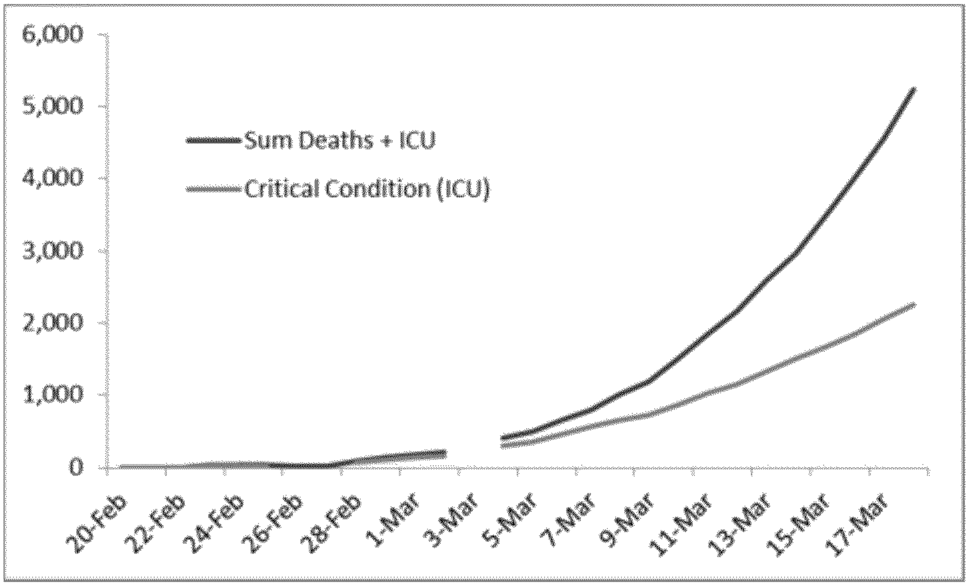
eFigure. Linear and Exponential Models Were Fitted to the Number of ICU Admissions to March 20, 2020



The predicted number of ICU admissions on March 20, 2020, was estimated to be 869 (95%CI: 744-995) with the linear model and was estimated to be 14 542 (95%CI: 8856-23 879) the exponential model. The linear growth rate was estimated to be 36.5 per day (95%CI: 30.0-43.0). The exponential growth rate was estimated to be 0.246 per day (95%CI: 0.221-0.272).

Figure courtesy of Stefano Merler, Bruno Kessler Foundation, Trento, Italy, Epilab-JRU, FEM-FBK Joint Research Unit, Province of Trento, Italy.

Graph of daily data reported by Italy (daily number of patients in ICU and sum of ICU patients + deaths). ICU admission curve lies between these two curves.



Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Thursday, March 19, 2020 12:59 AM
To: William Lang
Cc: Carter Mecher; Caneva, Duane; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: Re: Red Dawn Responding, Start 16 March

This is a study from CDC

CDC analysis shows coronavirus poses serious risk for younger people

https://thehill.com/policy/healthcare/488325-cdc-data-show-coronavirus-poses-serious-risk-for-younger-people

I am not sure if this group has adopted the notion that younger people are protected. I don't think so. China's younger generation is conspiciously smaller due to the one-child policy for so many years. Hence I maintain they have a disporportional (smaller) number of younger population.than in US or other countries in order for us to compare their disease status.

The Diamond Princess shows similar attack rate of young vs the elderly. So we cannot tell if indeed the young fares better. This CDC study supports that the younger generation can be seriously affected by covid-19. And I do believe it remains a serious health risk to those with co-existing health conditions, any age. We simply don't know much detail.

We can't let the herd immunity to play out -- many people will die. I will share some graphs tonight.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Thursday, March 19, 2020 12:26 AM, William Lang <wlang@worldclinic.com> wrote:

> Can anyone comment on the NYT article today noting a higher than expected number of hospitalizations in younger people? The article acknowledges that there is no information on comorbidities in the data, but still a huge question and if true and not related to comorbidities, undermines much of what many have been communicating to groups. Could it be that our message is getting out to the at-risk groups and they are self protecting much more effectively, so what we are seeing is not a change in hospitalization rates by age group, but just higher infection rates in younger ages because they are not being as cautious (maybe too much to hope).
>
> Thanks
>
> -Bill
>
> **William L. Lang, MD, MHA**

Medical Director
email: wlang@worldclinic.com

WorldClinic | Continuous Connected Care
28 Chargers Road | PO Box 1919 | New London, NH 03257
tel: ____________ | fax: ____________
direct (patient care): ____________ | direct (non-clinical): ____________

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On Mar 18, 2020, at 9:54 PM, Carter Mecher wrote:

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hotspots—NY, WA, and CA

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	2		2
4-Mar	10		2
5-Mar	19		4
6-Mar	40		7
7-Mar	78		12
8-Mar	105		14
9-Mar	142		25
10-Mar	173		32
11-Mar	216		53
12-Mar	325		88
13-Mar	524		137

14-Mar	613	1	185
15-Mar	729	5	269
16-Mar	950	7	464
17-Mar	1,374	12	923
18-Mar	2,382	20	1,871

	WA State (7.8M)		King County (2.2M)		Snohomish County (0.8M)	
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
21-Jan	1				1	
29-Feb	3		1		2	
1-Mar	6		4	1	2	
2-Mar	18	5	14	5	4	
3-Mar	27	9	21	8	6	1
4-Mar	39	10	31	9	8	1
5-Mar	70	10	51	9	18	1
6-Mar	79	11	58	10	19	1
7-Mar	102	16	71	15	27	1
8-Mar	136	18	83	17	31	1
9-Mar	162	21	116	20	37	1
10-Mar	267	24	190	22	54	1
11-Mar	366	29	234	26	68	2
12-Mar	457	31	270	27	108	3
13-Mar	568	37	328	32	166	4
14-Mar	642	40	387	35	154	4
15-Mar	769	42	420	37	176	4
16-Mar	904	48	488	43	200	4

17-Mar	1,012	52	569	43	254	6
18-Mar	1,187	66	562	56	310	6

	WA State (7.8M)		NYC State (19.4M)		CA State (40M)		US (330M)		Outsid
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases
29-Feb	3		0				68	1	
1-Mar	6		1				73	1	
2-Mar	18	5	1		43		99	6	37
3-Mar	27	9	2		43		103	6	31
4-Mar	39	10	10				154	11	105
5-Mar	70	10	19		60	1	197	12	
6-Mar	79	11	40		69	1	309	15	121
7-Mar	102	16	78		88	1	434	19	166
8-Mar	136	18	105		114	1	544	22	189
9-Mar	162	21	142		133	1	728	27	291
10-Mar	267	24	173		157	2	1,010	31	413
11-Mar	366	29	216		177	3	1,311	38	552
12-Mar	457	31	325		198	4	1,701	40	721
13-Mar	568	37	524		247	5	2,110	48	771
14-Mar	642	40	613	1	288	5	2,952	58	1,409
15-Mar	769	42	729	5	335	6	3,774	69	1,941
16-Mar	904	48	950	7	392	6	4,661	87	2,415
17-Mar	1,012	52	1,374	12	598	13	6,423	108	3,439
18-Mar	1,187	66	2,382	20	757	13	8,715	138	4,389

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 5:16 PM
To: Caneva, Duane
Cc: Carter Mecher; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Duane, thanks for sending this article. I suppose John is on this group since he talked about many things we have talked about:

0. Diamond Princess as in Carter's analysis (I like Carter's :-)).

1. The 1% infection in US population that I and Carter have been talking about for a long time.

2. Sampling testing within communities (which we have discussed since day 1)

3. He doesn't know or he questions if closing schools works (Ok. I do not agree with him)

4. the flattening of the curve. The famous one shown on all the media is not quite right. It is not theoretically correct. The flattening looks different, but ok.

5. It's true current hospital patients are vulnerable, we all agree and hence we advocate pre-emptive **early** NPI implementation

6. Worrying about kids in the malsl -- I don't think this is like H1N1 anymore. Malls are closing also.

7. Herd immunity. From the analysis, it seems that we will need to get to 49% to 89% among different communities to get herd immunity. In that case, many people will die. The clinicians I talked to today say that the lungs of patients are severely damaged -- not immediately, ususally late in the treatment period, like day 10. And they remain badly damaged even when recovered.

8 This statement --
"That's another reason we need data about the exact level of the epidemic activity." Really what data? Every data in such type of pandemic will have noise, will not be perfect, and will never be perfect. Even if we are done now, a year from now, we sill won't have perfect data. That is just a fact. if we need perfect

date to operate, we won't be operating most of the time. We need to be able to develop robust models that can describe the situation using partial information. It needs not perfect, but **it should provide useful insights to act.**

That's why Carter's, Richard's graphs putting side-by-side on how Italy's data matches China's are so important. Those curves -- they truly do not lie. James said we're 6-8 weeks behind China, we're indeed, as Carter reminds us everyday (almost) with those little graphs. That's why I advocate early intervention, because I assume when I see one case, we're 14 days behind, and we're, as I can see from the models.

That's also why the intervention graphs I show for each city, they need not be perfect, because we only want to see the patterns of changes, and how it changes.

9. Social distancing alone is not sufficient. We need screening, we need testing and we need to intercept new infection (put them in self-quarantine or isolation and contact trace), we need all of them so that we have maintain the infection at a rate to our healthcare systems to treat the sick patients properly.

https://newton.isye.gatech.edu/DrLee/

mobile:

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------- Original Message -------

On Wednesday, March 18, 2020 4:34 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:

https://www.statnews.com/2020/03/17/a-fiasco-in-the-making-as-the-coronavirus-pandemic-takes-hold-we-are-making-decisions-without-reliable-data/

From: Dr. Eva K Lee

Sent: Wednesday, March 18, 2020 3:34 PM

To:

Subject: RE: Red Dawn Responding, Start 16 March

Carter, it is very hard to slam the brake for Italy unless they can pour in the extra beds/medical resources. I am still trying to untangle my thousands of graphs. Once I can select which ones to show, you can see immediatley why all these come together.

Singapore and Hobg Kong are seeing increase too, because now so many sources are coming in. So the global effect is felt to the greatest extent.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 3:24 PM, Carter Mecher
wrote:

> Italy is still accelerating.
>
> <image001.png>
>
> Sent from Mail for Windows 10
>
> ---
>
> **From:** Carter Mecher
>
> **Sent:** Wednesday, March 18, 2020 2:33 PM
>
> **To:** Caneva, Duane; Tracey McNamara; Dr. Eva K Lee
>
> **Cc:** Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS;

mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Here is preliminary data on the current state of some of the countries in Europe we are following. UK is really exploding. Spain and Italy numbers continue to climb. Italy is now at 2,978 deaths. Italy is now about to overtake Hubei (3,122 total deaths). Will add US and France data later.

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Ja	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Fe	
	France (65M)		Spain (47M)		Italy (60M)		US (33	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cu
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	

28-Feb	57	2	32		889	21	63
29-Feb	100	2	45		1,128	29	68
1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	103
4-Mar	285	4	202		3,089	107	154
5-Mar	423	7	248	1	3,858	148	197
6-Mar	613	9	517	10	4,636	197	309
7-Mar	949	16	613	17	5,833	233	434
8-Mar	1,126	19	848	25	7,375	366	544
9-Mar	1,412	30	1,231	30	9,172	463	728
10-Mar	1,784	33	1,646	35	10,149	631	1,010
11-Mar	2,281	49	2,277	55	12,462	827	1,311
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423
18-Mar			13,716	533	35,713	2,978	

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:21 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Just some updates. First NYC. NYC seeing explosive growth in cases and deaths. See story below. Prevalence is much higher than numbers suggest to already have 20 deaths and have 5/1,300 attendees to a conference last week (0.4%) confirmed to have COVID.

5 doctors test positive for coronavirus after attending a meeting in NYC om March 8-11. Roughly 1,300 physicians and educators traveled from across the country and Canada for a Midtown assembly organized by the Council of Residency Directors (CORD) in Emergency Medicine, opening the possibility that hundreds of emergency room doctors have been exposed to the disease.

Below is a summary of NY State and NYC numbers

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	1		1
4-Mar	10		1
5-Mar	19		3
6-Mar	40		4
7-Mar	78		11
8-Mar	105		12
9-Mar	142		19
10-Mar	173		36

11-Mar	216		52
12-Mar	325		95
13-Mar	524		213
14-Mar	613	1	269
15-Mar	729	5	329
16-Mar	950	7	453
17-Mar	1,374	12	644
18-Mar	2,382	20	1,339

Sent from Mail for Windows 10

From: Caneva, Duane

Sent: Wednesday, March 18, 2020 1:52 PM

To: Tracey McNamara; Dr. Eva K Lee; Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

DHS Science and Technology Master Question List most recent version attached and available here: https://www.dhs.gov/publication/st-master-question-list-covid-19

For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Wednesday, March 18, 2020 1:21 PM

To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).

https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee

Sent: Wednesday, March 18, 2020 10:09 AM

To: Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR)

<Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).

I jjust talked to doctors who have treated these patients in

Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:

Some update on screening and testing -

1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.

2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:

Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am

pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPOR

YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	P
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	

2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)

Sent: Wednesday, March 18, 2020 11:27 AM

To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher

Sent: Tuesday, March 17, 2020 7:42 PM

To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>

Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee <eva.evalee. Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		
Date of 1st Death	15-Feb		4-Mar		21-Feb		
	France (65M)		Spain (47M)		Italy (60M)		
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum C
20-Feb	12	1	2		3	0	15
21-Feb	12	1	2		20	1	35
22-Feb	12	1	2		63	2	35
23-Feb	12	1	2		155	3	35
24-Feb	12	1	3		229	7	53
25-Feb	14	1	7		322	11	57
26-Feb	18	2	13		453	12	60
27-Feb	38	2	23		655	17	60
28-Feb	57	2	32		889	21	63
29-Feb	100	2	45		1,128	29	68
1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	10
4-Mar	285	4	202		3,089	107	15
5-Mar	423	7	248	1	3,858	148	19
6-Mar	613	9	517	10	4,636	197	30
7-Mar	949	16	613	17	5,833	233	43

8-Mar	1,126	19	848	25	7,375	366	54
9-Mar	1,412	30	1,231	30	9,172	463	72
10-Mar	1,784	33	1,646	35	10,149	631	1,0
11-Mar	2,281	49	2,277	55	12,462	827	1,3
12-Mar	2,876	61	3,059	86	15,113	1,016	1,7
13-Mar	3,661	79	4,209	120	17,660	1,266	2,1
14-Mar	4,499	91	5,841	191	21,157	1,441	2,9
15-Mar	5,423	127	7,753	288	24,747	1,809	3,7
16-Mar	6,633	148	9,942	342	27,980	2,158	4,6
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,2*

Sent from Mail for Windows 10

From: Brian Benson

Sent: Tuesday, March 17, 2020 3:10 PM

To: Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

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Channels

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HOME >> **CHINA**,**SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha
Source:Global Times Published: 2020/2/29 0:33:48

369

<image004.jpg>

<image005.jpg>

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ___________

Cell: ___________

From: Tracey McNamara
<tmcNamara@westernu.edu>

Sent: Tuesday, March 17, 2020
1:41 PM

To: Dr. Eva K Lee <evalee-
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<rdarling@patronusmedical.com>

Cc: Brian Benson
<brian.
Carter Mecher
Dr. Eva
Lee

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hs.gov>; jwleduc@utmb.edu;
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<David.Hassell@hhs.gov>; Hamel,
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david.a.tarantino@cbp.dhs.gov;
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<Ryan.Morhard@weforum.org>;
Steven Jt(tCHFStDPH)
<steven.stack@ky.gov>; Adams,
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danny.shiau@usuhs.edu; Cordts,
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Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson

Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

Get Outlook for Android

<image006.jpg>

From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee <evalee-

Cc: Brian Benson

<brian.
Tracey McNamara
<tmcNamara@westernu.edu>;
Carter Mecher
Dr. Eva
Lee

Caneva,
Duane
<duane.caneva@hq.dhs.gov>;
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CHRISTOPHER ALLEN
<CHRISALLEN_1

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Luciana <LBorio@iqt.org>; Baric,
Ralph S <rbaric@email.unc.edu>;
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<Richard.Hunt@hhs.gov>;
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Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
rdarling@patronusmedical.com
https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee <evalee- wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian.
wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as

healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thou

ghts ?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of **NY** has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

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<image007.jpg>

From: Dr. Eva

Lee <eva.evalee.lee64@gmail.com>
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher <cmecher@charter.net>
Cc: 1974usna@gmail.com <1974usna@gmail.com>; Caneva, Duane <duane.caneva@hq.d

hs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard.tubb@gmail.com>; Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Ca

rter.Mecher@va.gov>; Tom Bossert <tom.bossert@me.com>; Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling

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Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS

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Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.ta

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Dr.
Eva
K
Lee

<evalee-gatech@pm.me>
Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or

else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare

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ned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher <cmecher@charter.net> wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities

impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

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51A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4E

D.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee
Sent: Tues

day, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: 1974usna@gmail.c

om; Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; Wil

liam Lang; Mecher, Carter; Tom Bossert, Richard Hatchett, Lawler, James V;

Parker Jr, Gerald W; Hanfling, Dan; Gruber, David (DSHS); CHRISTOPHE

RALLEN;jamison.day@gmail.com;Borio,Luciana;TraceyMcNamara;Baric

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S/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR);

Matthew J CIV USARMY (US

A); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexand

er; EVANS, MARIE FRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/

BARDA);

Yeskey, Kevin;

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—

, Linda L; LLogandakar;

Venkayya, Rajeev; Ronny Jackson; Brian Bens

on;

Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with

movement trackers, irregular landline phone calls and other means.

evalee-

https://newton.isye.gatech.edu/DrLee/

mobile: 404-432-6835

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher <cmecher@charter.net> wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; jamison 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson,

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Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA)

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<rajeev.venkayya@takeda.com>; Ronny Jackson
MothersheadtJerry L.
<1974USNA@gmail.com>; Brian Benson
Dr. Eva K Lee

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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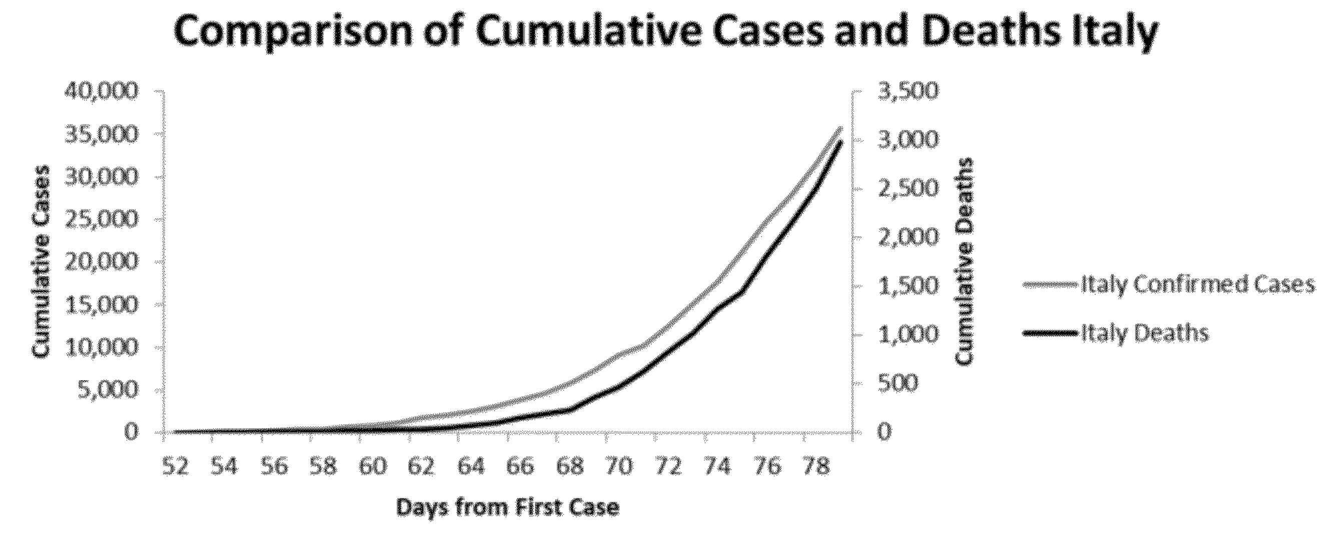

Comparison of Cumulative Cases and Deaths Italy
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
Cumulative Cases
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Cumulative Deaths
52
54
56
58
60
62
64
66
68
70
72
74
76
78
Days from First Case
Italy Confirmed Cases
Italy Deaths

To: Dr. Eva K William Lang[wlang@worldclinic.com]
Cc: Caneva, Duane[duane.caneva@hq.dhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva

eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; D isbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]; Cramer, Drew W. EOP/OMB[drew.w.cramer2@omb.eop.gov]
From: Carter
Sent: Thur 3/19/2020 7:31:22 AM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March
image006.jpg
image002.jpg
image005.jpg
image004.jpg
image003.jpg
image001.png
image007.jpg

The JAMA article referenced below noted on March 7 (Lombardy Region)
Current total number of patients with COVID-19 occupying an ICU bed (n = 359)
ICU admissions (n = 556)
[Total cumulative deaths in all of Italy on March 7 reported to be 233; sum of ICU census + deaths > ICU admissions—591 vs. 556] I don't have a breakdown of deaths by region in Italy

Data for all of Italy on March 7
Current total number of patients with COVID-19 occupying an ICU bed (n = 567)
Total cumulative deaths (233)
Sum (800)

Sent from Mail for Windows 10

From: Carter Mecher
Sent: Thursday, March 19, 2020 7:07 AM
To: Dr. Eva K Lee; William Lang
Cc: Caneva, Duane; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN;

Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Have been curious about projected demand in ICU care and how well initial forecasts projected the increase in actual demand. Italy recently published their experience thru March 7 with projections to March 20 (about 2 weeks later)

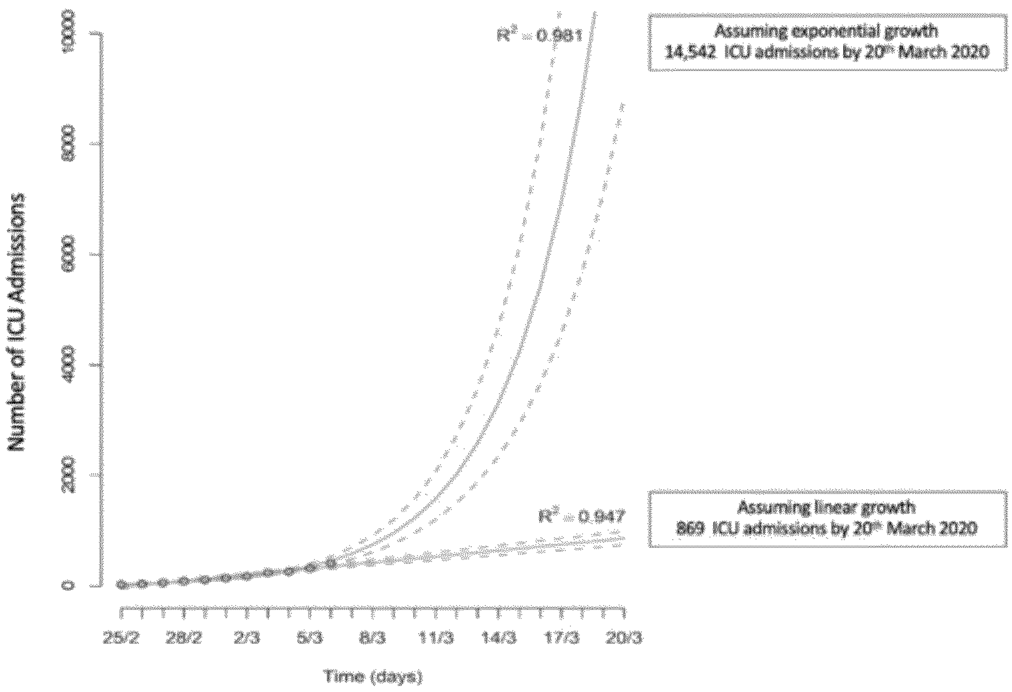
Italy published a paper in JAMA
March 13, 2020

Critical Care Utilization for the COVID-19 Outbreak in Lombardy, Italy Early Experience and Forecast During an Emergency Response

Giacomo Grasselli, MD[1,2]; Antonio Pesenti, MD[1,2]; Maurizio Cecconi, MD[3]

Forecasting ICU Demand Over the Next 2 Weeks
During the first 3 days of the outbreak, starting from February 22, the ICU admissions were 11, 15, and 20 in the COVID-19 Lombardy ICU Network. ICU admissions have increased continuously and exponentially over the first 2 weeks. Based on data to March 7, when 556 COVID-19–positive ICU patients had been admitted to hospitals over the previous 15 days, linear and exponential models were created to estimate further ICU demand (eFigure in the Supplement).

eFigure. Linear and Exponential Models Were Fitted to the Number of ICU Admissions to March 20, 2020



The predicted number of ICU admissions on March 20, 2020, was estimated to be 869 (95%CI: 744-995) with the linear model and was estimated to be 14 542 (95%CI: 8856-23 879) the exponential model. The linear growth rate was estimated to be 36.5 per day (95%CI: 30.0-43.0). The exponential growth rate was estimated to be 0.246 per day (95%CI: 0.221-0.272).

Figure courtesy of Stefano Merler, Bruno Kessler Foundation, Trento, Italy, Epilab-JRU, FEM-FBK Joint Research Unit, Province of Trento, Italy.

They had data thru March 7 and extrapolated ICU demand (admissions) thru March 20. They projected linear growth and exponential growth. We have been tracking the daily updates from Italy and following the reported number of patients in the ICU. [China reported current census of hospitalized patients and critically ill patients; we assumed that the data from Italy was similar (census and not cumulative admissions.] On the March 7, that number reported by Italy was 567, In the JAMA article, the authors state that 556 C19 ICU patients had been admitted. So the numbers are close. If the numbers reported are ICU census numbers (a snapshot), then these numbers are an underestimate of ICU admissions. No data is available on ICU discharges/transfers. If we assumed that the majority of deaths occurred in the ICU, then a high end approximation of ICU admissions would equal the sum of ICU census and deaths (this would assume all deaths occurred in the ICU). On March 7, that sum was 800. On March 18, that sum was 5,235 (2,257 in ICU).

Below are the numbers of what actually occurred thru March 18.

Italy				
Date	Cum Deaths	Cum Confirmed	Critical Condition (ICU)	Sum Deaths + ICU
30-Jan	0	2		0
31-Jan	0	2		0
7-Feb	0	3		0
20-Feb	0	3	2	2

21-Feb	1	20	6	7
22-Feb	2	63	7	9
23-Feb	3	155	26	29
24-Feb	7	229	23	30
25-Feb	11	322	19	30
26-Feb	12	453		12
27-Feb	17	655		17
28-Feb	21	889	64	85
29-Feb	29	1,128	105	134
1-Mar	34	1,694	140	174
2-Mar	52	2,036	166	218
3-Mar	79	2,502		
4-Mar	107	3,089	295	402
5-Mar	148	3,858	351	499
6-Mar	197	4,636	462	659
7-Mar	233	5,833	567	800
8-Mar	366	7,375	650	1,016
9-Mar	463	9,172	733	1,196
10-Mar	631	10,149	877	1,508
11-Mar	827	12,264	1,028	1,855
12-Mar	1,016	15,113	1,153	2,169
13-Mar	1,266	17,660	1,328	2,594
14-Mar	1,441	21,157	1,518	2,959
15-Mar	1,809	24,747	1,672	3,481
16-Mar	2,158	27,980	1,851	4,009
17-Mar	2,503	31,506	2,060	4,563
18-Mar	2,978	35,713	2,257	5,235

So here is where Italy is as of March 18. Given that a significant % of deaths (but not all) would be expected to have occurred in the ICU, the ICU admission curve lies between these two points.

eFigure. Linear and Exponential Models Were Fitted to the Number of ICU Admissions to March 20, 2020

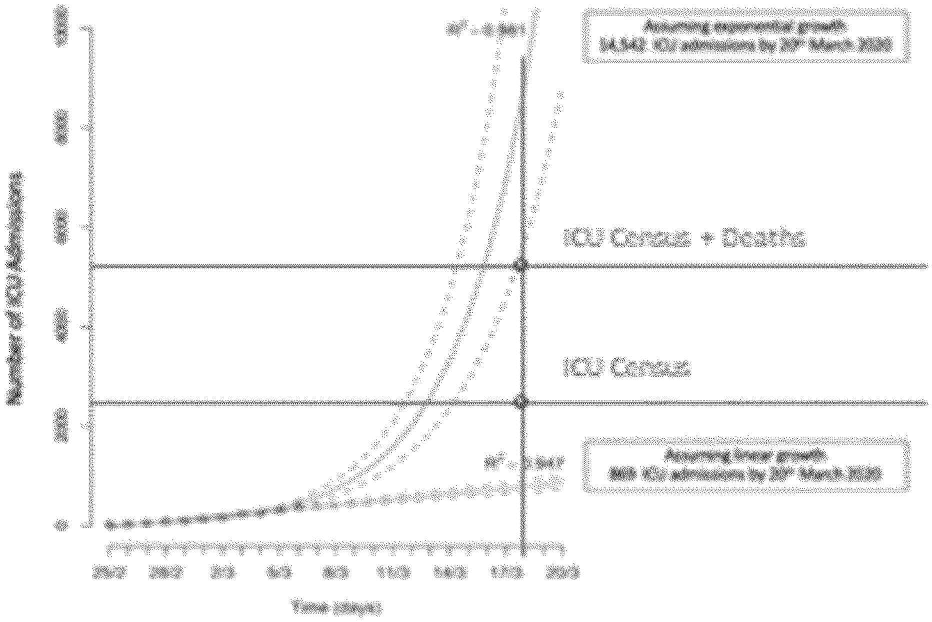


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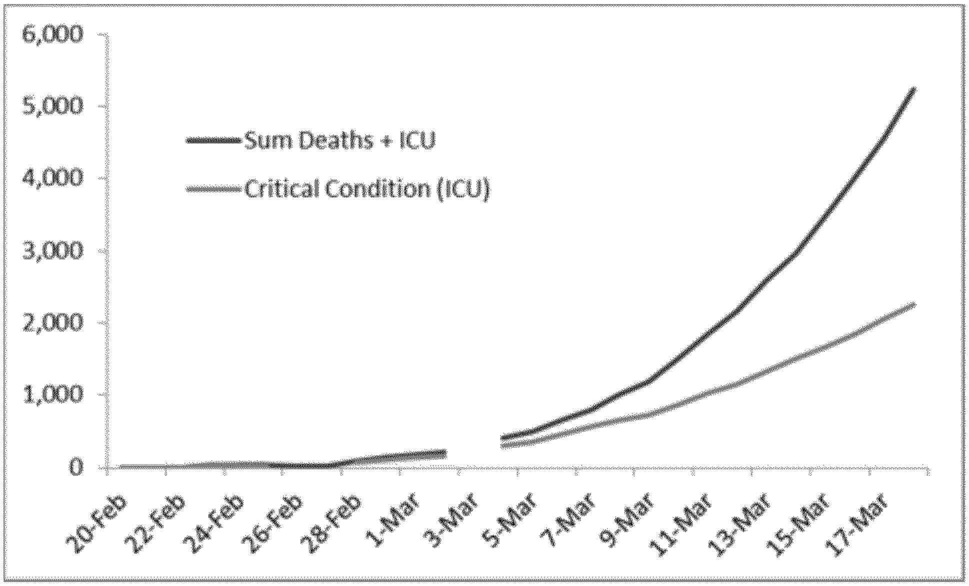
Figure courtesy of Stefano Merler, Bruno Kessler Foundation, Trento, Italy, Epilab-JRU, FEM-FBK Joint Research Unit, Province of Trento, Italy.

Graph of daily data reported by Italy (daily number of patients in ICU and sum of ICU patients + deaths). ICU admission curve lies between these two curves.



Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Thursday, March 19, 2020 12:59 AM
To: William Lang
Cc: Carter Mecher; Caneva, Duane; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: Re: Red Dawn Responding, Start 16 March

This is a study from CDC

CDC analysis shows coronavirus poses serious risk for younger people

https://thehill.com/policy/healthcare/488325-cdc-data-show-coronavirus-poses-serious-risk-for-younger-people

I am not sure if this group has adopted the notion that younger people are protected. I don't think so. China's younger generation is conspiciously smaller due to the one-child policy for so many years. Hence I maintain they have a disporportional (smaller) number of younger population.than in US or other countries in order for us to compare their disease status.

The Diamond Princess shows similar attack rate of young vs the elderly. So we cannot tell if indeed the young fares better. This CDC study supports that the younger generation can be seriously affected by covid-19. And I do believe it remains a serious health risk to those with co-existing health conditions, any age. We simply don't know much detail.

We can't let the herd immunity to play out -- many people will die. I will share some graphs tonight.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Thursday, March 19, 2020 12:26 AM, William Lang <wlang@worldclinic.com> wrote:

> Can anyone comment on the NYT article today noting a higher than expected number of hospitalizations in younger people? The article acknowledges that there is no information on comorbidities in the data, but still a huge question and if true and not related to comorbidities, undermines much of what many have been communicating to groups. Could it be that our message is getting out to the at-risk groups and they are self protecting much more effectively, so what we are seeing is not a change in hospitalization rates by age group, but just higher infection rates in younger ages because they are not being as cautious (maybe too much to hope).
>
> Thanks
>
> -Bill
>
> **William L. Lang, MD, MHA**

Medical Director
email: wlang@worldclinic.com

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28 Chargers Road | PO Box 1919 | New London, NH 03257
tel: ____________ | fax: ____________
direct (patient care): ____________ | direct (non-clinical): ____________

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On Mar 18, 2020, at 9:54 PM, Carter Mecher wrote:

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Hotspots—NY, WA, and CA

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	2		2
4-Mar	10		2
5-Mar	19		4
6-Mar	40		7
7-Mar	78		12
8-Mar	105		14
9-Mar	142		25
10-Mar	173		32
11-Mar	216		53
12-Mar	325		88
13-Mar	524		137

14-Mar	613	1	185
15-Mar	729	5	269
16-Mar	950	7	464
17-Mar	1,374	12	923
18-Mar	2,382	20	1,871

	WA State (7.8M)		King County (2.2M)		Snohomish County (0.8M)	
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
21-Jan	1				1	
29-Feb	3		1		2	
1-Mar	6		4	1	2	
2-Mar	18	5	14	5	4	
3-Mar	27	9	21	8	6	1
4-Mar	39	10	31	9	8	1
5-Mar	70	10	51	9	18	1
6-Mar	79	11	58	10	19	1
7-Mar	102	16	71	15	27	1
8-Mar	136	18	83	17	31	1
9-Mar	162	21	116	20	37	1
10-Mar	267	24	190	22	54	1
11-Mar	366	29	234	26	68	2
12-Mar	457	31	270	27	108	3
13-Mar	568	37	328	32	166	4
14-Mar	642	40	387	35	154	4
15-Mar	769	42	420	37	176	4
16-Mar	904	48	488	43	200	4

17-Mar	1,012	52	569	43	254	6
18-Mar	1,187	66	562	56	310	6

	WA State (7.8M)		NYC State (19.4M)		CA State (40M)		US (330M)		Outsid
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases
29-Feb	3		0				68	1	
1-Mar	6		1				73	1	
2-Mar	18	5	1		43		99	6	37
3-Mar	27	9	2		43		103	6	31
4-Mar	39	10	10				154	11	105
5-Mar	70	10	19		60	1	197	12	
6-Mar	79	11	40		69	1	309	15	121
7-Mar	102	16	78		88	1	434	19	166
8-Mar	136	18	105		114	1	544	22	189
9-Mar	162	21	142		133	1	728	27	291
10-Mar	267	24	173		157	2	1,010	31	413
11-Mar	366	29	216		177	3	1,311	38	552
12-Mar	457	31	325		198	4	1,701	40	721
13-Mar	568	37	524		247	5	2,110	48	771
14-Mar	642	40	613	1	288	5	2,952	58	1,409
15-Mar	769	42	729	5	335	6	3,774	69	1,941
16-Mar	904	48	950	7	392	6	4,661	87	2,415
17-Mar	1,012	52	1,374	12	598	13	6,423	108	3,439
18-Mar	1,187	66	2,382	20	757	13	8,715	138	4,389

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 5:16 PM
To: Caneva, Duane
Cc: Carter Mecher; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Duane, thanks for sending this article. I suppose John is on this group since he talked about many things we have talked about:

0. Diamond Princess as in Carter's analysis (I like Carter's :-)).

1. The 1% infection in US population that I and Carter have been talking about for a long time.

2. Sampling testing within communities (which we have discussed since day 1)

3. He doesn't know or he questions if closing schools works (Ok. I do not agree with him)

4. the flattening of the curve. The famous one shown on all the media is not quite right. It is not theoretically correct. The flattening looks different, but ok.

5. It's true current hospital patients are vulnerable, we all agree and hence we advocate pre-emptive **early** NPI implementation

6. Worrying about kids in the malsl -- I don't think this is like H1N1 anymore. Malls are closing also.

7. Herd immunity. From the analysis, it seems that we will need to get to 49% to 89% among different communities to get herd immunity. In that case, many people will die. The clinicians I talked to today say that the lungs of patients are severely damaged -- not immediately, ususally late in the treatment period, like day 10. And they remain badly damaged even when recovered.

8 This statement --
"That's another reason we need data about the exact level of the epidemic activity." Really what data? Every data in such type of pandemic will have noise, will not be perfect, and will never be perfect. Even if we are done now, a year from now, we sill won't have perfect data. That is just a fact. if we need perfect

date to operate, we won't be operating most of the time. We need to be able to develop robust models that can describe the situation using partial information. It needs not perfect, but **it should provide useful insights to act.**

That's why Carter's, Richard's graphs putting side-by-side on how Italy's data matches China's are so important. Those curves -- they truly do not lie. James said we're 6-8 weeks behind China, we're indeed, as Carter reminds us everyday (almost) with those little graphs. That's why I advocate early intervention, because I assume when I see one case, we're 14 days behind, and we're, as I can see from the models.

That's also why the intervention graphs I show for each city, they need not be perfect, because we only want to see the patterns of changes, and how it changes.

9. Social distancing alone is not sufficient. We need screening, we need testing and we need to intercept new infection (put them in self-quarantine or isolation and contact trace), we need all of them so that we have maintain the infection at a rate to our healthcare systems to treat the sick patients properly.

https://newton.isye.gatech.edu/DrLee/

mobile:

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------- Original Message -------

On Wednesday, March 18, 2020 4:34 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:

https://www.statnews.com/2020/03/17/a-fiasco-in-the-making-as-the-coronavirus-pandemic-takes-hold-we-are-making-decisions-without-reliable-data/

From: Dr. Eva K Lee

Sent: Wednesday, March 18, 2020 3:34 PM

To:

Subject: RE: Red Dawn Responding, Start 16 March

Carter, it is very hard to slam the brake for Italy unless they can pour in the extra beds/medical resources. I am still trying to untangle my thousands of graphs. Once I can select which ones to show, you can see immediatley why all these come together.

Singapore and Hobg Kong are seeing increase too, because now so many sources are coming in. So the global effect is felt to the greatest extent.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 3:24 PM, Carter Mecher wrote:

Italy is still accelerating.

<image001.png>

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:33 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS;

mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Here is preliminary data on the current state of some of the countries in Europe we are following. UK is really exploding. Spain and Italy numbers continue to climb. Italy is now at 2,978 deaths. Italy is now about to overtake Hubei (3,122 total deaths). Will add US and France data later.

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Ja	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Fe	
	France (65M)		Spain (47M)		Italy (60M)		US (330	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cu
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	

28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	
1-Mar	130	2	84		1,694	34	73	
2-Mar	191	3	120		2,036	52	99	
3-Mar	212	4	151		2,502	79	103	
4-Mar	285	4	202		3,089	107	154	
5-Mar	423	7	248	1	3,858	148	197	
6-Mar	613	9	517	10	4,636	197	309	
7-Mar	949	16	613	17	5,833	233	434	
8-Mar	1,126	19	848	25	7,375	366	544	
9-Mar	1,412	30	1,231	30	9,172	463	728	
10-Mar	1,784	33	1,646	35	10,149	631	1,010	
11-Mar	2,281	49	2,277	55	12,462	827	1,311	
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423	
18-Mar			13,716	533	35,713	2,978		

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:21 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Just some updates. First NYC. NYC seeing explosive growth in cases and deaths. See story below. Prevalence is much higher than numbers suggest to already have 20 deaths and have 5/1,300 attendees to a conference last week (0.4%) confirmed to have COVID.

5 doctors test positive for coronavirus after attending a meeting in NYC om March 8-11. Roughly 1,300 physicians and educators traveled from across the country and Canada for a Midtown assembly organized by the Council of Residency Directors (CORD) in Emergency Medicine, opening the possibility that hundreds of emergency room doctors have been exposed to the disease.

Below is a summary of NY State and NYC numbers

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	1		1
4-Mar	10		1
5-Mar	19		3
6-Mar	40		4
7-Mar	78		11
8-Mar	105		12
9-Mar	142		19
10-Mar	173		36

11-Mar	216		52
12-Mar	325		95
13-Mar	524		213
14-Mar	613	1	269
15-Mar	729	5	329
16-Mar	950	7	453
17-Mar	1,374	12	644
18-Mar	2,382	20	1,339

Sent from Mail for Windows 10

From: Caneva, Duane

Sent: Wednesday, March 18, 2020 1:52 PM

To: Tracey McNamara; Dr. Eva K Lee; Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

DHS Science and Technology Master Question List most recent version attached and available here: https://www.dhs.gov/publication/st-master-question-list-covid-19

For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Wednesday, March 18, 2020 1:21 PM

To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).

https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee

Sent: Wednesday, March 18, 2020 10:09 AM

To: Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR)

<Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

> I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).
>
> I jjust talked to doctors who have treated these patients in

Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:

Some update on screening and testing -

1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.

2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:

> Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.
>
> I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am

pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPOR										
YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	P
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	

2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)

Sent: Wednesday, March 18, 2020 11:27 AM

To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher

Sent: Tuesday, March 17, 2020 7:42 PM

To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>

Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee <eva.evalee. Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		
Date of 1st Death	15-Feb		4-Mar		21-Feb		
	France (65M)		Spain (47M)		Italy (60M)		
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum C
20-Feb	12	1	2		3	0	15
21-Feb	12	1	2		20	1	35
22-Feb	12	1	2		63	2	35
23-Feb	12	1	2		155	3	35
24-Feb	12	1	3		229	7	53
25-Feb	14	1	7		322	11	57
26-Feb	18	2	13		453	12	60
27-Feb	38	2	23		655	17	60
28-Feb	57	2	32		889	21	63
29-Feb	100	2	45		1,128	29	68
1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	10
4-Mar	285	4	202		3,089	107	15
5-Mar	423	7	248	1	3,858	148	19
6-Mar	613	9	517	10	4,636	197	30
7-Mar	949	16	613	17	5,833	233	43

8-Mar	1,126	19	848	25	7,375	366	54
9-Mar	1,412	30	1,231	30	9,172	463	72
10-Mar	1,784	33	1,646	35	10,149	631	1,0
11-Mar	2,281	49	2,277	55	12,462	827	1,3
12-Mar	2,876	61	3,059	86	15,113	1,016	1,7
13-Mar	3,661	79	4,209	120	17,660	1,266	2,1
14-Mar	4,499	91	5,841	191	21,157	1,441	2,9
15-Mar	5,423	127	7,753	288	24,747	1,809	3,7
16-Mar	6,633	148	9,942	342	27,980	2,158	4,6
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,2*

Sent from Mail for Windows 10

From: Brian Benson

Sent: Tuesday, March 17, 2020 3:10 PM

To: Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

<image002.jpg>

Channels

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[ ][]

<image003.jpg>

HOME >> **CHINA**,**SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha
Source:Global Times Published: 2020/2/29 0:33:48

369

<image004.jpg>

<image005.jpg>

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ____________

Cell: ____________

From: Tracey McNamara
<tmcNamara@westernu.edu>

Sent: Tuesday, March 17, 2020
1:41 PM

To: Dr. Eva K Lee <evalee-
Rob Darling,
MD
<rdarling@patronusmedical.com>

Cc: Brian Benson
<brian.
Carter Mecher
Dr. Eva
Lee

Caneva,
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Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

Get Outlook for Android

<image006.jpg>

From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee <evalee-

Cc: Brian Benson

<brian.
Tracey McNamara
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Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
rdarling@patronusmedical.com
https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee <evalee- wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian.
wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as

healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thou

ghts
?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara
<tmcNamara@westernu.edu> wrote:

Wh
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do
we
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the
cav
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?
The
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NY
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Arm
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Cor
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e?

What is the capacity of DoD to help in this crisis???? If ever therewas a time to bring all assets to the table, this is it.

Tracey

Get Outlook for Android

<image007.jpg>

From: Dr. Eva

Lee <eva.evalee.lee64@gmail.com>
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher <cmecher@charter.net>
Cc: 1974usna@gmail.com <1974usna@gmail.com>; Caneva, Duane <duane.caneva@hq.d

hs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard.tubb@gmail.com>; Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Ca

rter.Mecher@va.gov>; Tom Bossert <tom.bossert@me.com>; Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling

, Dan <DHanfling@iqt.org>; Gruber, David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_10@msn.com>; jamison.day@gmail.com <jamison.day@gmail.com>; Borio,

Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS

<THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; Charityt A@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov

>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, tDanielt (OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/

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MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associ

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LG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(t CH FSt DP H) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@

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Eva
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Lee

<evalee-gatech@pm.me>
Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or

else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare

resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be plan

ned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher <cmecher@charter.net> wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities

impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

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51A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4E

D.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tues

day, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: 1974usna@gmail.c

om; Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; Wil

liam Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V;

Parker Jr, Gerald W; Hanfling, Dan; Gruber, David (DSHS); CHRISTOPHE

RALLEN; jamison.day@gmail.com; Borio, Luciana; Tracey McNamara; Baric

—, Ralph S;

Hunt, Richard (OS/ASPR/EMMO);

WILKINSON, THOMAS;

M.D.;

David;CharitytA@CDPH;

GregoryJ;

Walters,William(STATE.GOV);

HAM

ILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (O

S/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR);

Matthew J CIV USARMY (US

A); L is a Koonin;

HARVEY, MELISSA;

WOLFE, HERBERT, Eastman, Alexand

er; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/

BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John

(OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (

OS/ASPR/IO);

Wade, David; TARANTINO, DAVIDA;

KAUSHIK, SANGEETA

.,Lee, Scott (OS/ASPR/EMMO); Larry G.; Ryan Morhard.; Steven Jt (t CHFStDP

H);

Adams, Jerome (HHS/OASH);

Mansoura, Monique K.; Fantinato, Jessi

ca (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schn

itzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery, Logan

, Linda L.; LLogandakar; Venkayya, Rajeev; RonnyJackson; BrianBens

on; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with

movement trackers, irregular landline phone calls and other means.

evalee-

https://newton.isye.gatech.edu/DrLee/

mobile: 404-432-6835

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher <cmecher@charter.net> wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; jamison 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson,

Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA)

<Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR)
<John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO)
<David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO)
<Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>;
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<rajeev.venkayya@takeda.com>; Ronny Jackson
MothersheadtJerry L.
<1974USNA@gmail.com>; Brian Benson
Dr. Eva K Lee

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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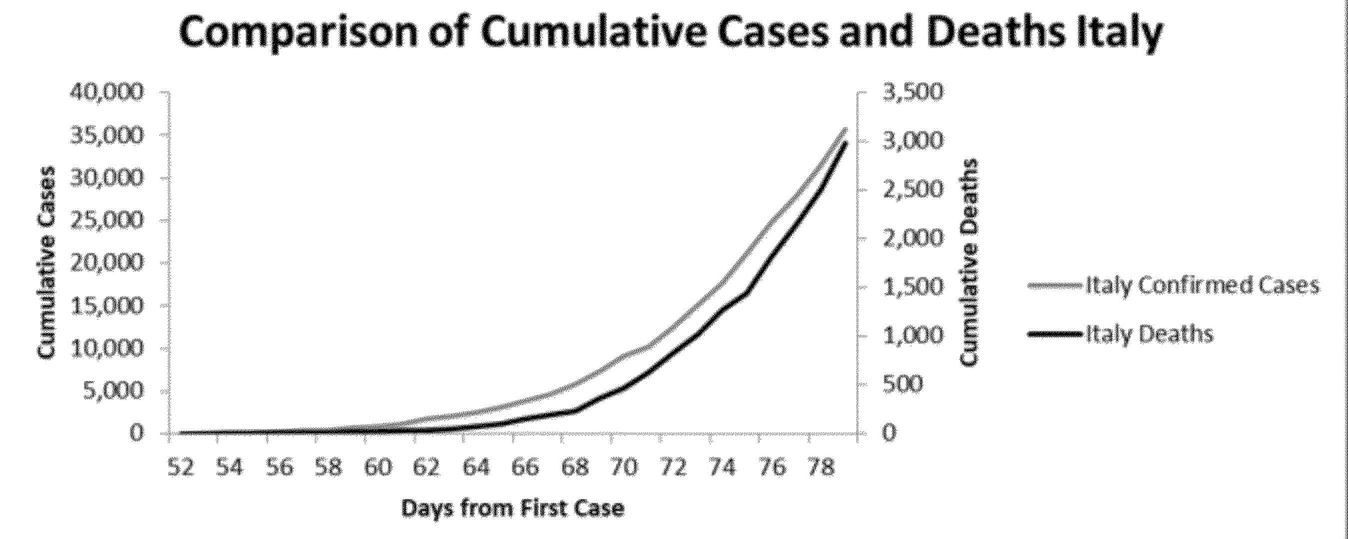

Comparison of Cumulative Cases and Deaths Italy
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Cumulative Cases
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Cumulative Deaths
52
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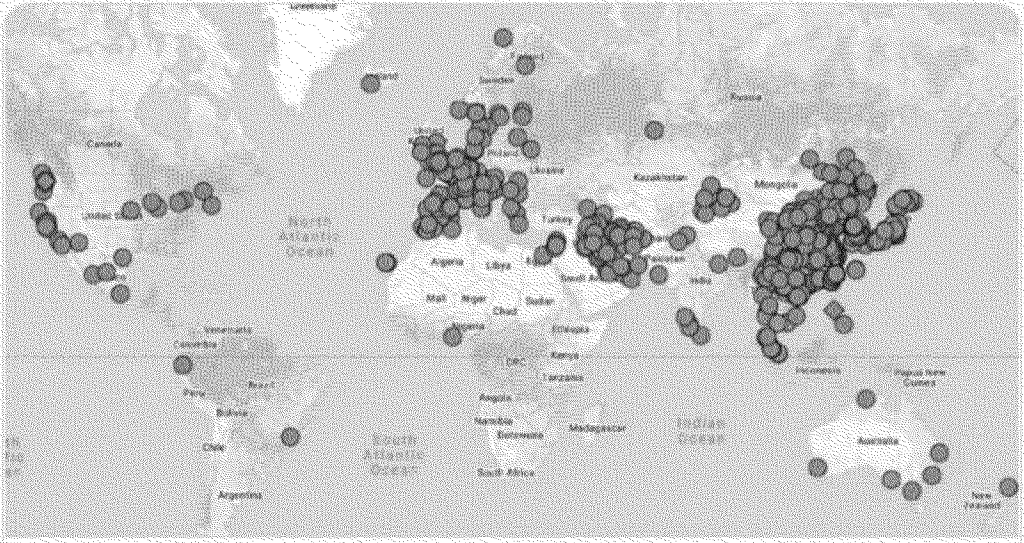
74
76
78
Days from First Case
Italy Confirmed Cases
Italy Deaths

To: Carter William Lang[wlang@worldclinic.com]; Dr. Eva K
Cc: Caneva, Duane[duane.caneva@hq.dhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva

eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; D isbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]; Cramer, Drew W. EOP/OMB[drew.w.cramer2@omb.eop.gov]
From: Richard Hatchett[richard.hatchett@cepi.net]
Sent: Thur 3/19/2020 8:27:50 AM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March

BNO Newsroom @BNODesk · 10h

China's Hubei province, where the coronavirus pandemic began, reported no new cases on Wednesday



Tracking coronavirus: Map, data and timeline - BNO News

The tables below show confirmed cases of coronavirus (2019-nCoV, officially known as SARS-CoV-2 or COVID-19) around the world. Scroll ...

bnonews.com

347 648 2K

From: Carter Mecher
Sent: 19 March 2020 12:07
To: William Lang <wlang@worldclinic.com>; Dr. Eva K Lee
Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee eric.mcdonald@sdcounty.ca.gov; Richard Tubb Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; D isbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Arthur Kellermann <arthur.kellermann@usuhs.edu>; Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>; Cramer, Drew W. EOP/OMB <drew.w.cramer2@omb.eop.gov>
Subject: RE: Red Dawn Responding, Start 16 March

Let me run this down—first I have seen. This looks like a scam. This same thing (not with the VA logo) is all over social media (gargling etc.).

Sent from Mail for Windows 10

From: William Lang
Sent: Thursday, March 19, 2020 7:49 AM
To: Carter Mecher; Dr. Eva K Lee
Cc: Caneva, Duane; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Since many active government people on this thread, thought you might be interested in a note I've now been forwarded by 2 different Fortune 100 HR directors citing this as "Government Guidance" that they received yesterday. I've told them that a small VA Clinic in Oregon does not count as "Government Guidance," but this is floating around.

ROSEBURG HEALTHCARE SYSTEM
Brookings VA Clinic
DEPARTMENT OF VETERANS AFFAIRS
840 Railroad St.
PO BOX 634
Brookings, Oregon 97415
Phone

IMPORTANT ANNOUNCEMENT - CORONAVIRUS

Last evening dining out with friends, one of their uncles, who's graduated with a master's degree and who worked in Shenzhen Hospital (Guangdong Province, China) sent him the following notes on Coronavirus for guidance:

1. If you have a runny nose and sputum, you have a common cold.
2. Coronavirus pneumonia is a dry cough with no runny nose.
3. This new virus is not heat-resistant and will be killed by a temperature of just 26/27 degrees. 80 deg F . It hates the sun.
4. If someone sneezes with it, it takes about 10 feet before it drops to the ground and is no longer airborne.
5. If it drops on a metal surface it will live for at least 12 hours - so if you come into contact with any metal surface - wash your hands as soon as you can with a bacterial soap.
6. On fabric it can survive for 6-12 hours. normal laundry detergent will kill it.
7. Drinking warm water is effective for all viruses. Try not to drink liquids with ice.
8. Wash your hands frequently as the virus can only live on your hands for 5-10 minutes, but - a lot can happen during that time - you can rub your eyes, pick your nose unwittingly and so on.
9. You should also gargle as a prevention. A simple solution of salt in warm water will suffice.
10. Can't emphasize enough - drink plenty of water!

THE SYMPTOMS

1. It will first infect the throat, so you'll have a sore throat lasting 3/4 days
2. The virus then blends into a nasal fluid that enters the trachea and then the lungs, causing pneumonia. This takes about 5/6 days further.
3. With the pneumonia comes high fever and difficulty in breathing.
4. The nasal congestion is not like the normal kind. You feel like you're drowning. It's imperative you then seek immediate medical attention.

SPREAD THE WORD - PLEASE SHARE

-Bill

William L. Lang, MD, MHA
Medical Director

WorldClinic | Continuous Connected Care
tel: | fax:
direct (admin and non-urgent patient care):

From: Carter Mecher
Sent: Thursday, March 19, 2020 7:31 AM
To: Dr. Eva K Lee William Lang <wlang@worldclinic.com>
Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO)

<Joseph.Hamel@hhs.gov>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee eric.mcdonald@sdcounty.ca.gov; Richard Tubb Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <chrisallen jamison.day@gmail.com; Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; D isbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann Arthur Kellermann <arthur.kellermann@usuhs.edu>; Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>; Cramer, Drew W. EOP/OMB <drew.w.cramer2@omb.eop.gov>
Subject: RE: Red Dawn Responding, Start 16 March

The JAMA article referenced below noted on March 7 (Lombardy Region)
Current total number of patients with COVID-19 occupying an ICU bed (n = 359)
ICU admissions (n = 556)
[Total cumulative deaths in all of Italy on March 7 reported to be 233; sum of ICU census + deaths > ICU admissions—591 vs. 556] I don't have a breakdown of deaths by region in Italy

Data for all of Italy on March 7
Current total number of patients with COVID-19 occupying an ICU bed (n = 567)
Total cumulative deaths (233)
Sum (800)

Sent from Mail for Windows 10

From: Carter Mecher
Sent: Thursday, March 19, 2020 7:07 AM
To: Dr. Eva K Lee; William Lang
Cc: Caneva, Duane; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis

Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Have been curious about projected demand in ICU care and how well initial forecasts projected the increase in actual demand. Italy recently published their experience thru March 7 with projections to March 20 (about 2 weeks later)

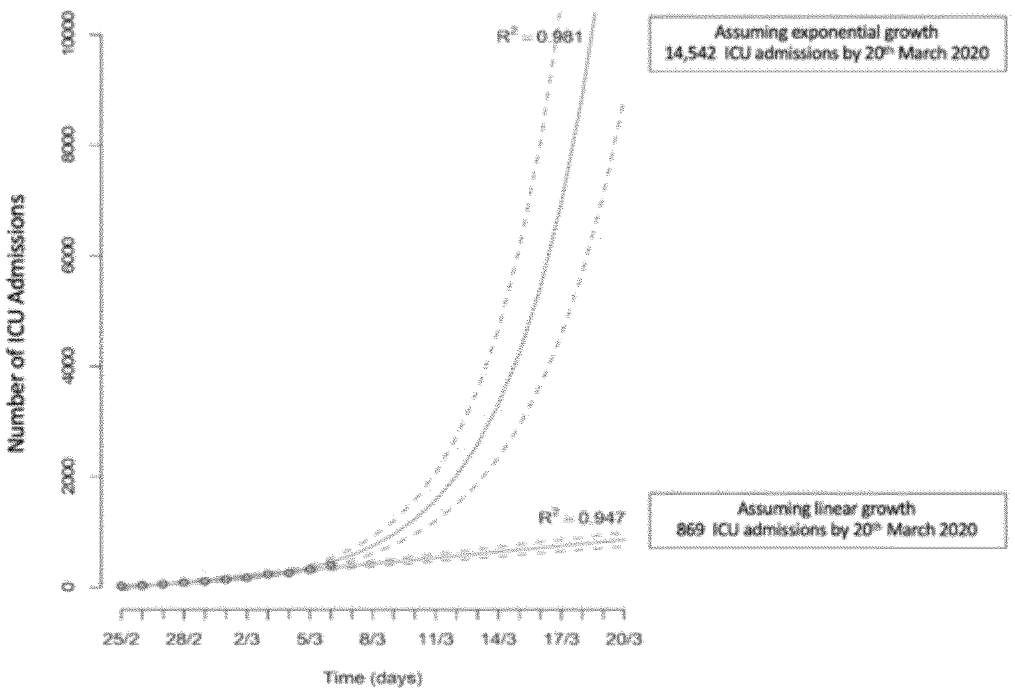
Italy published a paper in JAMA
March 13, 2020

Critical Care Utilization for the COVID-19 Outbreak in Lombardy, Italy Early Experience and Forecast During an Emergency Response

Giacomo Grasselli, MD[1,2]; Antonio Pesenti, MD[1,2]; Maurizio Cecconi, MD[3]

Forecasting ICU Demand Over the Next 2 Weeks
During the first 3 days of the outbreak, starting from February 22, the ICU admissions were 11, 15, and 20 in the COVID-19 Lombardy ICU Network. ICU admissions have increased continuously and exponentially over the first 2 weeks. Based on data to March 7, when 556 COVID-19–positive ICU patients had been admitted to hospitals over the previous 15 days, linear and exponential models were created to estimate further ICU demand (eFigure in the Supplement).

eFigure. Linear and Exponential Models Were Fitted to the Number of ICU Admissions to March 20, 2020



The predicted number of ICU admissions on March 20, 2020, was estimated to be 869 (95%CI: 744-995) with the linear model and was estimated to be 14 542 (95%CI: 8856-23 879) the exponential model. The linear growth rate was estimated to be 36.5 per day (95%CI: 30.0-43.0). The exponential growth rate was estimated to be 0.246 per day (95%CI: 0.221-0.272).

Figure courtesy of Stefano Merler, Bruno Kessler Foundation, Trento, Italy, Epilab-JRU, FEM-FBK Joint Research Unit, Province of Trento, Italy.

They had data thru March 7 and extrapolated ICU demand (admissions) thru March 20. They projected linear growth and exponential growth.   We have been tracking the daily updates from Italy and following the reported number of patients in the ICU. [China reported current census of hospitalized patients and critically ill patients; we assumed that the data from Italy was similar (census and not cumulative admissions.] On the March 7, that number reported by Italy was 567, In the JAMA article, the authors state that 556 C19 ICU patients had been admitted. So the numbers are close. If the numbers reported are ICU census numbers (a snapshot), then these numbers are an underestimate of ICU admissions. No data is available on ICU discharges/transfers. If we

assumed that the majority of deaths occurred in the ICU, then a high end approximation of ICU admissions would equal the sum of ICU census and deaths (this would assume all deaths occurred in the ICU). On March 7, that sum was 800. On March 18, that sum was 5,235 (2,257 in ICU).

Below are the numbers of what actually occurred thru March 18.

Italy				
Date	Cum Deaths	Cum Confirmed	Critical Condition (ICU)	Sum Deaths + ICU
30-Jan	0	2		0
31-Jan	0	2		0
7-Feb	0	3		0
20-Feb	0	3	2	2
21-Feb	1	20	6	7
22-Feb	2	63	7	9
23-Feb	3	155	26	29
24-Feb	7	229	23	30
25-Feb	11	322	19	30
26-Feb	12	453		12
27-Feb	17	655		17
28-Feb	21	889	64	85
29-Feb	29	1,128	105	134
1-Mar	34	1,694	140	174
2-Mar	52	2,036	166	218
3-Mar	79	2,502		
4-Mar	107	3,089	295	402
5-Mar	148	3,858	351	499
6-Mar	197	4,636	462	659
7-Mar	233	5,833	567	800
8-Mar	366	7,375	650	1,016
9-Mar	463	9,172	733	1,196

10-Mar	631	10,149	877	1,508
11-Mar	827	12,264	1,028	1,855
12-Mar	1,016	15,113	1,153	2,169
13-Mar	1,266	17,660	1,328	2,594
14-Mar	1,441	21,157	1,518	2,959
15-Mar	1,809	24,747	1,672	3,481
16-Mar	2,158	27,980	1,851	4,009
17-Mar	2,503	31,506	2,060	4,563
18-Mar	2,978	35,713	2,257	5,235

So here is where Italy is as of March 18. Given that a significant % of deaths (but not all) would be expected to have occurred in the ICU, the ICU admission curve lies between these two points.

eFigure. Linear and Exponential Models Were Fitted to the Number of ICU Admissions to March 20, 2020

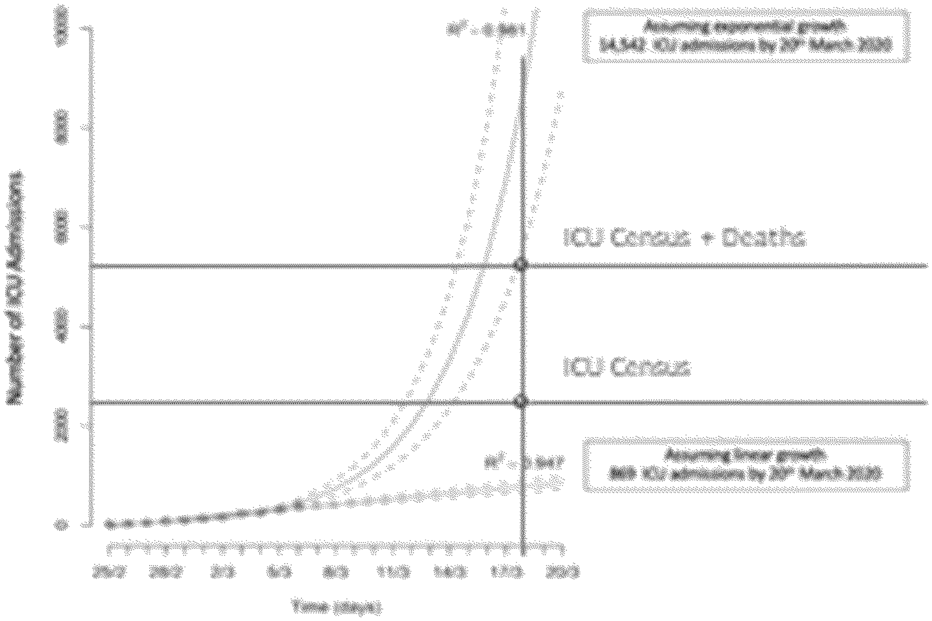


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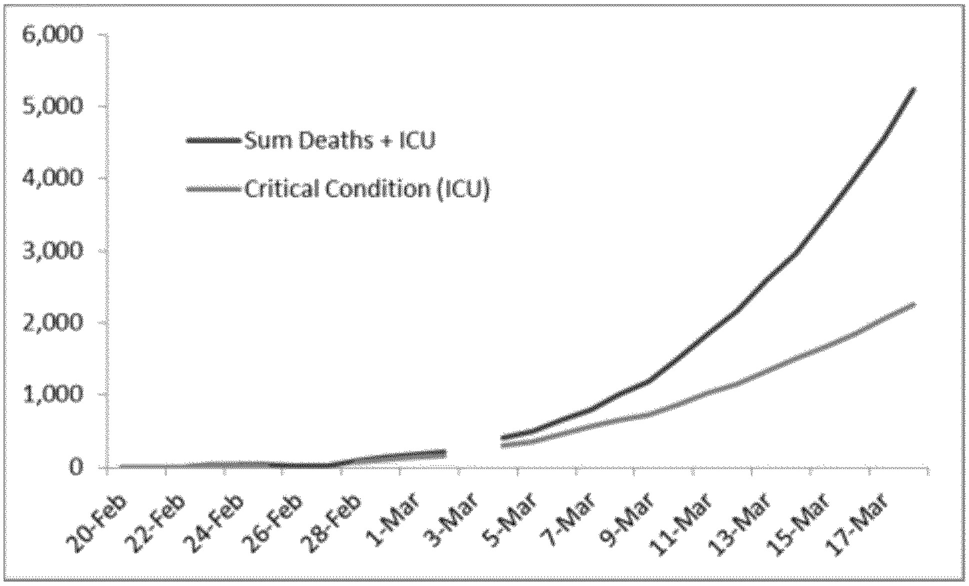
Figure courtesy of Stefano Merler, Bruno Kessler Foundation, Trento, Italy, Epilab-JRU, FEM-FBK Joint Research Unit, Province of Trento, Italy.

Graph of daily data reported by Italy (daily number of patients in ICU and sum of ICU patients + deaths). ICU admission curve lies between these two curves.



Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Thursday, March 19, 2020 12:59 AM
To: William Lang
Cc: Carter Mecher; Caneva, Duane; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: Re: Red Dawn Responding, Start 16 March

This is a study from CDC

CDC analysis shows coronavirus poses serious risk for younger people

https://thehill.com/policy/healthcare/488325-cdc-data-show-coronavirus-poses-serious-risk-for-younger-people

I am not sure if this group has adopted the notion that younger people are protected. I don't think so. China's younger generation is conspiciously smaller due to the one-child policy for so many years. Hence I maintain they have a disporportional (smaller) number of younger population.than in US or other countries in order for us to compare their disease status.

The Diamond Princess shows similar attack rate of young vs the elderly. So we cannot tell if indeed the young fares better. This CDC study supports that the younger generation can be seriously affected by covid-19. And I do believe it remains a serious health risk to those with co-existing health conditions, any age. We simply don't know much detail.

We can't let the herd immunity to play out -- many people will die. I will share some graphs tonight.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Thursday, March 19, 2020 12:26 AM, William Lang <wlang@worldclinic.com> wrote:

> Can anyone comment on the NYT article today noting a higher than expected number of hospitalizations in younger people? The article acknowledges that there is no information on comorbidities in the data, but still a huge question and if true and not related to comorbidities, undermines much of what many have been communicating to groups. Could it be that our message is getting out to the at-risk groups and they are self protecting much more effectively, so what we are seeing is not a change in hospitalization rates by age group, but just higher infection rates in younger ages because they are not being as cautious (maybe too much to hope).
>
> Thanks
>
> -Bill
>
> **William L. Lang, MD, MHA**
> Medical Director
> email: wlang@worldclinic.com

WorldClinic | Continuous Connected Care
28 Chargers Road | PO Box 1919 | New London, NH 03257
tel: ____________ | fax: ____________
direct (patient care): ____________ | direct (non-clinical): ____________

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On Mar 18, 2020, at 9:54 PM, Carter Mecher wrote:

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Hotspots—NY, WA, and CA

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	2		2
4-Mar	10		2
5-Mar	19		4
6-Mar	40		7
7-Mar	78		12
8-Mar	105		14
9-Mar	142		25
10-Mar	173		32
11-Mar	216		53
12-Mar	325		88
13-Mar	524		137
14-Mar	613	1	185

15-Mar	729	5	269
16-Mar	950	7	464
17-Mar	1,374	12	923
18-Mar	2,382	20	1,871

	WA State (7.8M)		King County (2.2M)		Snohomish County (0.8M)	
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
21-Jan	1				1	
29-Feb	3		1		2	
1-Mar	6		4	1	2	
2-Mar	18	5	14	5	4	
3-Mar	27	9	21	8	6	1
4-Mar	39	10	31	9	8	1
5-Mar	70	10	51	9	18	1
6-Mar	79	11	58	10	19	1
7-Mar	102	16	71	15	27	1
8-Mar	136	18	83	17	31	1
9-Mar	162	21	116	20	37	1
10-Mar	267	24	190	22	54	1
11-Mar	366	29	234	26	68	2
12-Mar	457	31	270	27	108	3
13-Mar	568	37	328	32	166	4
14-Mar	642	40	387	35	154	4
15-Mar	769	42	420	37	176	4
16-Mar	904	48	488	43	200	4
17-Mar	1,012	52	569	43	254	6

18-Mar	1,187	66	562	56	310	6

	WA State (7.8M)		NYC State (19.4M)		CA State (40M)		US (330M)		Outsid
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases
29-Feb	3		0				68	1	
1-Mar	6		1				73	1	
2-Mar	18	5	1		43		99	6	37
3-Mar	27	9	2		43		103	6	31
4-Mar	39	10	10				154	11	105
5-Mar	70	10	19		60	1	197	12	
6-Mar	79	11	40		69	1	309	15	121
7-Mar	102	16	78		88	1	434	19	166
8-Mar	136	18	105		114	1	544	22	189
9-Mar	162	21	142		133	1	728	27	291
10-Mar	267	24	173		157	2	1,010	31	413
11-Mar	366	29	216		177	3	1,311	38	552
12-Mar	457	31	325		198	4	1,701	40	721
13-Mar	568	37	524		247	5	2,110	48	771
14-Mar	642	40	613	1	288	5	2,952	58	1,409
15-Mar	769	42	729	5	335	6	3,774	69	1,941
16-Mar	904	48	950	7	392	6	4,661	87	2,415
17-Mar	1,012	52	1,374	12	598	13	6,423	108	3,439
18-Mar	1,187	66	2,382	20	757	13	8,715	138	4,389

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 5:16 PM
To: Caneva, Duane
Cc: Carter Mecher; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Duane, thanks for sending this article. I suppose John is on this group since he talked about many things we have talked about:

0. Diamond Princess as in Carter's analysis (I like Carter's :-)).

1. The 1% infection in US population that I and Carter have been talking about for a long time.

2. Sampling testing within communities (which we have discussed since day 1)

3. He doesn't know or he questions if closing schools works (Ok. I do not agree with him)

4. the flattening of the curve. The famous one shown on all the media is not quite right. It is not theoretically correct. The flattening looks different, but ok.

5. It's true current hospital patients are vulnerable, we all agree and hence we advocate pre-emptive **early** NPI implementation

6. Worrying about kids in the malsl -- I don't think this is like H1N1 anymore. Malls are closing also.

7. Herd immunity. From the analysis, it seems that we will need to get to 49% to 89% among different communities to get herd immunity. In that case, many people will die. The clinicians I talked to today say that the lungs of patients are severely damaged -- not immediately, ususally late in the treatment period, like day 10. And they remain badly damaged even when recovered.

8 This statement --
"That's another reason we need data about the exact level of the epidemic activity." Really what data? Every data in such type of pandemic will have noise, will not be perfect, and will never be perfect. Even if we are done now, a year from now, we sill won't have perfect data. That is just a fact. if we need perfect date to operate, we won't be operating most of the time. We need to be able to develop robust models that can describe the situation using partial information. It needs not perfect, but **it should provide useful insights to act.**

That's why Carter's, Richard's graphs putting side-by-side on how Italy's data matches China's are so important. Those curves -- they truly do not lie. James said we're 6-8 weeks behind China, we're indeed, as Carter reminds us everyday (almost) with those little graphs. That's why I advocate early intervention, because I assume when I see one case, we're 14 days behind, and we're, as I can see from the models.

That's also why the intervention graphs I show for each city, they need not be perfect, because we only want to see the patterns of changes, and how it changes.

9. Social distancing alone is not sufficient. We need screening, we need testing and we need to intercept new infection (put them in self-quarantine or isolation and contact trace), we need all of them so that we have maintain the infection at a rate to our healthcare systems to treat the sick patients properly.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 4:34 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:

https://www.statnews.com/2020/03/17/a-fiasco-in-the-making-as-the-coronavirus-pandemic-takes-hold-we-are-making-decisions-without-reliable-data/

From: Dr. Eva K Lee

Sent: Wednesday, March 18, 2020 3:34 PM

To:

Subject: RE: Red Dawn Responding, Start 16 March

Carter, it is very hard to slam the brake for Italy unless they can pour in the extra beds/medical resources. I am still trying to untangle my thousands of graphs. Once I

can select which ones to show, you can see immediatley why all these come together.

Singapore and Hobg Kong are seeing increase too, because now so many sources are coming in. So the global effect is felt to the greatest extent.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 3:24 PM, Carter Mecher wrote:

Italy is still accelerating.

<image001.png>

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:33 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV

USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Here is preliminary data on the current state of some of the countries in Europe we are following. UK is really exploding. Spain and Italy numbers continue to climb. Italy is now at 2,978 deaths. Italy is now about to overtake Hubei (3,122 total deaths). Will add US and France data later.

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Ja	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Fe	
	France (65M)		Spain (47M)		Italy (60M)		US (330	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cu
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	

1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	103
4-Mar	285	4	202		3,089	107	154
5-Mar	423	7	248	1	3,858	148	197
6-Mar	613	9	517	10	4,636	197	309
7-Mar	949	16	613	17	5,833	233	434
8-Mar	1,126	19	848	25	7,375	366	544
9-Mar	1,412	30	1,231	30	9,172	463	728
10-Mar	1,784	33	1,646	35	10,149	631	1,010
11-Mar	2,281	49	2,277	55	12,462	827	1,311
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423
18-Mar			13,716	533	35,713	2,978	

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:21 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS;

mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Just some updates. First NYC. NYC seeing explosive growth in cases and deaths. See story below. Prevalence is much higher than numbers suggest to already have 20 deaths and have 5/1,300 attendees to a conference last week (0.4%) confirmed to have COVID.

5 doctors test positive for coronavirus after attending a meeting in NYC om March 8-11. Roughly 1,300 physicians and educators traveled from across the country and Canada for a Midtown assembly organized by the Council of Residency Directors (CORD) in Emergency Medicine, opening the possibility that hundreds of emergency room doctors have been exposed to the disease.

Below is a summary of NY State and NYC numbers

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	1		1
4-Mar	10		1
5-Mar	19		3
6-Mar	40		4
7-Mar	78		11
8-Mar	105		12
9-Mar	142		19
10-Mar	173		36
11-Mar	216		52
12-Mar	325		95

13-Mar	524		213
14-Mar	613	1	269
15-Mar	729	5	329
16-Mar	950	7	453
17-Mar	1,374	12	644
18-Mar	2,382	20	1,339

Sent from Mail for Windows 10

From: Caneva, Duane

Sent: Wednesday, March 18, 2020 1:52 PM

To: Tracey McNamara; Dr. Eva K Lee; Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

DHS Science and Technology Master Question List most recent version attached and available here: https://www.dhs.gov/publication/st-master-question-list-covid-19

For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

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From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Wednesday, March 18, 2020 1:21 PM

To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).

https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee

Sent: Wednesday, March 18, 2020 10:09 AM

To: Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED

<mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).

I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:

Some update on screening and testing -

1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.

2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:12 PM,
Carter Mecher ________________ wrote:

Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and

only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPOR

YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	P
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	

2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)

Sent: Wednesday, March 18, 2020 11:27 AM

To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher

Sent: Tuesday, March 17, 2020 7:42 PM

To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>

Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee <eva.evalee. Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		
Date of 1st Death	15-Feb		4-Mar		21-Feb		
	France (65M)		Spain (47M)		Italy (60M)		
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum C
20-Feb	12	1	2		3	0	15
21-Feb	12	1	2		20	1	35
22-Feb	12	1	2		63	2	35
23-Feb	12	1	2		155	3	35
24-Feb	12	1	3		229	7	53
25-Feb	14	1	7		322	11	57
26-Feb	18	2	13		453	12	60
27-Feb	38	2	23		655	17	60
28-Feb	57	2	32		889	21	63
29-Feb	100	2	45		1,128	29	68
1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	10
4-Mar	285	4	202		3,089	107	15
5-Mar	423	7	248	1	3,858	148	19
6-Mar	613	9	517	10	4,636	197	30
7-Mar	949	16	613	17	5,833	233	43
8-Mar	1,126	19	848	25	7,375	366	54
9-Mar	1,412	30	1,231	30	9,172	463	72

10-Mar	1,784	33	1,646	35	10,149	631	1,0
11-Mar	2,281	49	2,277	55	12,462	827	1,3
12-Mar	2,876	61	3,059	86	15,113	1,016	1,7(
13-Mar	3,661	79	4,209	120	17,660	1,266	2,1
14-Mar	4,499	91	5,841	191	21,157	1,441	2,9
15-Mar	5,423	127	7,753	288	24,747	1,809	3,7
16-Mar	6,633	148	9,942	342	27,980	2,158	4,6(
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,2*

Sent from Mail for Windows 10

From: Brian Benson

Sent: Tuesday, March 17, 2020 3:10 PM

To: Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and

procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

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HOME >> **CHINA**,**SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

369

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<image005.jpg>

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province

on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ___________

Cell: ___________

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Tuesday, March 17, 2020 1:41 PM

To: Dr. Eva K Lee <evalee-
Rob Darling, MD <rdarling@patronusmedical.com>

Cc: Brian Benson <brian.
Carter Mecher
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Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN
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Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

Get Outlook for Android

<image006.jpg>

From: Rob Darling, MD
<rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee <evalee-

Cc: Brian Benson
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<jmcleod@patronusmedical.com>;
Lauren Johnston
<ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

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Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
rdarling@patronusmedical.com
https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee <evalee-

wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian.
wrote:

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re workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

Wh

at is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

Get Outlook for Android

<image007.jpg>

From: Dr. Eva Lee

<eva.evalee.lee64@gmail.com>
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher <cmecher@charter.net>
Cc: 1974usna@gmail.com <1974usna@gmail.com>; Caneva, Duane <duane.caneva@hq.dhs.g

ov>; Mc Donald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard.tubb@gmail.com>; Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.

Mecher@va.gov>; Tom Bossert <tom.bossert@me.com>; Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling,

Dan <DHanfling@iqt.org>; Gruber, David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_10@msn.com>; jamison.day@gmail.com <jamison.day@gmail.com>; Borio, Luci

ana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <T

HOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>;

Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, tDanielt (OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPP

R) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV US ARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, ME

LISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.

hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow

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@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(t CH FSt DPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitr

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nitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.

edu>; LLogandakar <llogandakar@gmail.com>; Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson <ronny.jacksonmd@gmail.com>; Brian Benson <brian.benson@icloud.com>; Dr. Eva K Lee <ev

alee-gatech@pm.me>
Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else

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urces, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned.

I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher <cmecher@charter.net> wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest

in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

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It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED

.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee
Sent: Tuesd

ay, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: 1974usna@gmail.co

m; Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; Willi

am Lang;

Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V.; P

arker Jr, Gerald W; Hanfling, Dan; Gruber, David (DSHS); CHRISTOPHER R

ALLEN, jamison.day@gmail.com; Borio, Luciana; Tracey McNamara; Baric,

Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; D

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Matthew J CIV USARMY (USA

); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexande

r; EVANS, MARIEFRED.; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/B

ARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (

OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (O

S/ASPR/IO); Wade, David; TARANTINO, DAVIDA; KAUSHIK, SANGEETA;

Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt (tCHFStDPH

);

Adams, Jerome (HHS/OASH);

Mansoura, Monique K.; Fantinato, Jessic

a (USDA.GOV); DC; danny.shiau@usuhs.edu, Cordts, Jerome (CTR); Schnit

zer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan,

Linda L; LLogandakar; Venkayya, Rajeev, Ronny Jackson, Brian Benso

n;

Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-

19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don’t adopt some strict measures ... I’m afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong.”

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers,

irregular landline phone calls and other means.

evalee-

https://newton.isye.gatech.edu/DrLee/

mobile: 404-432-6835

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher <cmecher@charter.net> wrote:

> Worth the read.
>
> https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295
>
> Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary

(OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee <eva.evalee.lee64@gmail.com>; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR)

<John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO)
<David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO)
<Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>;
TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK,
SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott
(OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G
<PadgetLG@state.gov>; Ryan Morhard
<Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH)
<steven.stack@ky.gov>; Adams, Jerome (HHS/OASH)
<Jerome.Adams@hhs.gov>; Mansoura, Monique K.
<mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV)
<jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>;
danny.shiau@usuhs.edu; Cordts, Jerome (CTR)
<jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J.
<jschnitzer@mitre.org>; Ignacio, Joselito
<joselito.ignacio@fema.dhs.gov>; Will Gaskins
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Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar
Venkayya, Rajeev
<rajeev.venkayya@takeda.com>; Ronny Jackson
MothersheadtJerry L.
<1974USNA@gmail.com>; Brian Benson
Dr. Eva K Lee

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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To: Caneva, Duane[duane.caneva@hq.dhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Dr. Eva K Lee[evalee- Carter
Cc: Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva

eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@HHS.GOV]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]
From: Gruber,David (DSHS)[David.Gruber@dshs.texas.gov]
Sent: Thur 3/19/2020 9:30:44 AM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March
COVID 3.jpg

I'd posted this graphic (attached) a bit ago which indicates that the popular prevailing "spread the epi curve" graphics show hospital capacity as flat line (a bit ominous term for a healthcare provider.) The bottom graph shows what I feel a more realistic depiction of hospital capacity over time.

I'm trying to build a hospital, "Drain, Maintain, Build" model for hospital capacity. What drains resources, what can sustain current capacity and what can be used to build capacity. These have individually been discussed but I'm trying to provide a comprehensive presentation and more importantly focused approach to the hospital situation.

Any suggestions, data sources or thoughts. (Working at the state level isn't allowing for time to research these things; I appreciate Duane having created this group to help all of us.)

Thanks,
Dave

From: *Caneva, Duane <duane.caneva@hq.dhs.gov>*
Sent: Wednesday, March 18, 2020 12:50 PM
To: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph

(OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann Arthur Kellermann <arthur.kellermann@usuhs.edu>; Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>
Subject: RE: Red Dawn Responding, Start 16 March

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DHS Science and Technology Master Question List most recent version attached and available here:
https://www.dhs.gov/publication/st-master-question-list-covid-19
For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Wednesday, March 18, 2020 1:21 PM
To: Subject: RE: Red Dawn Responding, Start 16 March

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SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).
https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 10:09 AM
To: Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/
mobile:

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------- Original Message -------
On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

> I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).
>
> I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.
>
> https://newton.isye.gatech.edu/DrLee/

mobile:

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------- Original Message -------
On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:

Some update on screening and testing -
1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.

2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:

Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPORTED BY SENTINEL PROVIDE											
YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	NUM. OF PROVIDERS	% UNWEIGH ILI
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	2,907	1.50434
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	2,938	1.60062
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	2,962	1.74176
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	2,992	1.86264
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	3,003	2.01412
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	3,018	2.36006
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	2,986	2.62939
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	2,981	2.9516
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	2,990	3.42406
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	2,986	3.29862
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	2,947	3.86227
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	2,917	5.02905
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	2,906	7.14443
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	2,949	6.22886
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	2,976	5.08047
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	2,967	5.37322
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	2,966	6.02641
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	2,956	6.89746
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	2,960	7.09968
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	2,916	6.22684
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	2,914	5.62976
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	2,826	5.12485
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	2,625	5.3537

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)
Sent: Wednesday, March 18, 2020 11:27 AM
To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher
Sent: Tuesday, March 17, 2020 7:42 PM
To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee- Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan	1-Feb	30-Jan	24-Jan
Date of 1st Death	15-Feb	4-Mar	21-Feb	29-Feb
	France (65M)	Spain (47M)	Italy (60M)	US (330M)

	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	
1-Mar	130	2	84		1,694	34	73	
2-Mar	191	3	120		2,036	52	99	
3-Mar	212	4	151		2,502	79	103	
4-Mar	285	4	202		3,089	107	154	
5-Mar	423	7	248	1	3,858	148	197	
6-Mar	613	9	517	10	4,636	197	309	
7-Mar	949	16	613	17	5,833	233	434	
8-Mar	1,126	19	848	25	7,375	366	544	
9-Mar	1,412	30	1,231	30	9,172	463	728	
10-Mar	1,784	33	1,646	35	10,149	631	1,010	
11-Mar	2,281	49	2,277	55	12,462	827	1,311	
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	
13-Mar	3,661	79						
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	
15-Mar	5,423	127						
16-Mar	6,633	148						
17-Mar	7,730	175						

Sent from Mail for Windows 10

From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

Channels

[ ][]

HOME >> **CHINA,SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

369

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ____________

Cell: ____________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson Carter Mecher Dr. Eva Lee ____________________ Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>;

LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

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From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee <eva.evalee
Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb
William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1
Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1
HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO)

<Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar
Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson
Andy Desjardins, MD
<adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
rdarling@patronusmedical.com
https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee wrote:

> We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend

the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian. wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

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From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher
Cc:
Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN

Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>;

Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar
Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson <ronny
Brian Benson <brian.
Dr. Eva K Lee <evalee-

Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves

will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png
>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally

(OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher
wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

---

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee

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Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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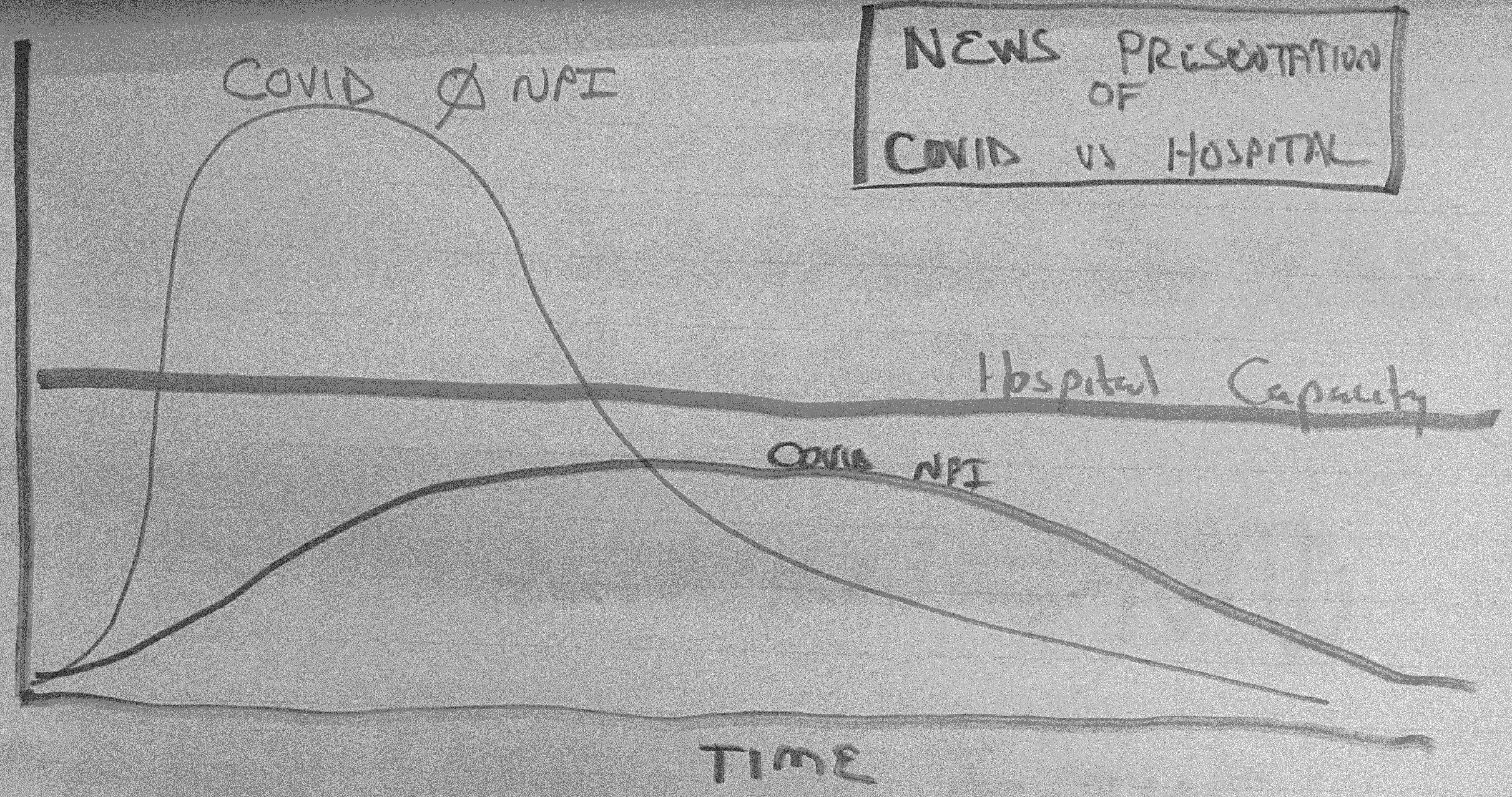
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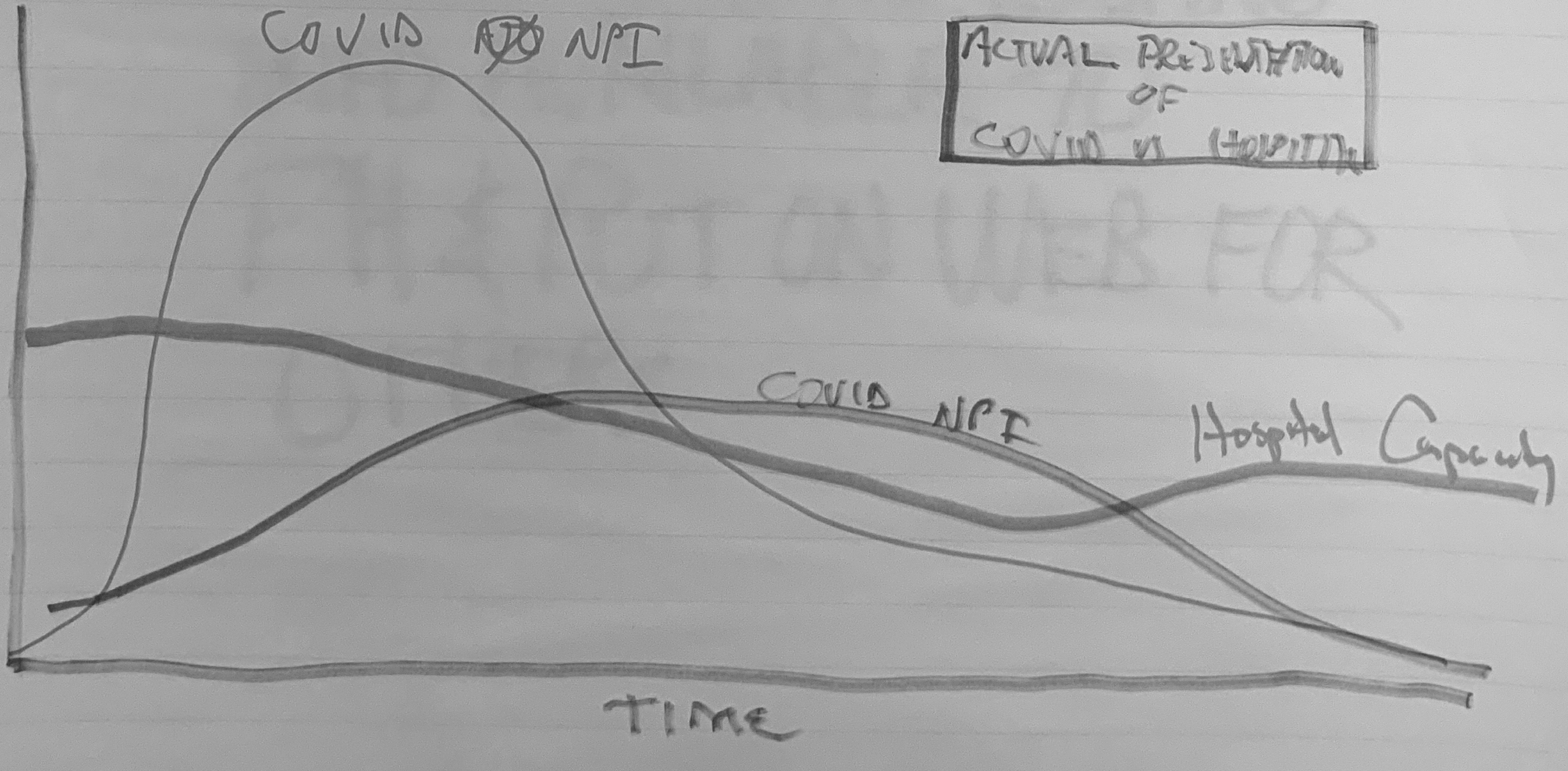
TIME


ACTUAL PRESENTATION OF COVID VS HOSPITAL
COVID Ø NPI
COVID NPI
Hospital Capacity
TIME

To: Richard
Cc: Caneva, Duane[duane.caneva@hq.dhs.gov]; Tracey McNamara[tmcNamara@westernu.edu]; Dr. Eva K Lee[evalee- Carter Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; William Lang[wlang@worldclinic.com]; Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; Disbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]
From: Gruber,David (DSHS)[David.Gruber@dshs.texas.gov]
Sent: Thur 3/19/2020 10:05:26 AM (UTC-04:00)
Subject: Re: Red Dawn Responding, Start 16 March

Agree that as a partially potential build. Getting supplies and staff for building as more of a challenge than finding space.

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From: Richard Tubb
Sent: Thursday, March 19, 2020 8:47 AM
To: Gruber,David (DSHS)
Cc: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee; Carter Mecher; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
Subject: Re: Red Dawn Responding, Start 16 March

I've said it before (as have others) so my apologies if you're hearing it again...we have hotels that are empty (and for those on the coasts, cruise ships as well). Bill Land even has some formaldehyde Laden trailers he'd sell cheap!)

Why not use those for quarantine and first level low acuity care?

Sent from my iPad

On Mar 19, 2020, at 9:30 AM, Gruber,David (DSHS) <David.Gruber@dshs.texas.gov> wrote:

I'd posted this graphic (attached) a bit ago which indicates that the popular prevailing "spread the epi curve" graphics show hospital capacity as flat line (a bit ominous term for a healthcare provider.) The bottom graph shows what I feel a more realistic depiction of hospital capacity over time.

I'm trying to build a hospital, "Drain, Maintain, Build" model for hospital capacity. What drains resources, what can sustain current capacity and what can be used to build capacity. These have individually been discussed but I'm trying to provide a comprehensive presentation and more importantly focused approach to the hospital situation.

Any suggestions, data sources or thoughts. (Working at the state level isn't allowing for time to research these things; I appreciate Duane having created this group to help all of us.)

Thanks,
Dave

From: *Caneva, Duane <duane.caneva@hq.dhs.gov>*
Sent: Wednesday, March 18, 2020 12:50 PM
To: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard

<Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann Arthur Kellermann <arthur.kellermann@usuhs.edu>; Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>
Subject: RE: Red Dawn Responding, Start 16 March

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DHS Science and Technology Master Question List most recent version attached and available here:
https://www.dhs.gov/publication/st-master-question-list-covid-19
For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Wednesday, March 18, 2020 1:21 PM
To: Subject: RE: Red Dawn Responding, Start 16 March

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SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).
https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 10:09 AM
To: Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON

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Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

> I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).
>
> I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.
>
> https://newton.isye.gatech.edu/DrLee/
> mobile:
>
> Sent with ProtonMail Secure Email.
>
> ------- Original Message -------
> On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:
>
> > Some update on screening and testing -
> > 1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but

some of your locations should have them. I don't know who to ask for the exact distribution.

2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:

Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPORTED BY SENTINEL PR

YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	NUM. OF PROVIDERS	% UN

2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	2,907	[illegible]
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	2,938	[illegible]
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	2,962	[illegible]
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	2,992	[illegible]
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	3,003	[illegible]
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	3,018	[illegible]
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	2,986	[illegible]
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	2,981	
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	2,990	[illegible]
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	2,986	[illegible]
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	2,947	[illegible]
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	2,917	[illegible]
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	2,906	[illegible]
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	2,949	[illegible]
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	2,976	[illegible]
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	2,967	[illegible]
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	2,966	[illegible]
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	2,956	[illegible]
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	2,960	[illegible]
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	2,916	[illegible]
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	2,914	[illegible]
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	2,826	[illegible]
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	2,625	

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)
Sent: Wednesday, March 18, 2020 11:27 AM

To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher
Sent: Tuesday, March 17, 2020 7:42 PM
To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee- Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	C
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	
1-Mar	130	2	84		1,694	34	73	
2-Mar	191	3	120		2,036	52	99	
3-Mar	212	4	151		2,502	79	103	
4-Mar	285	4	202		3,089	107	154	
5-Mar	423	7	248	1	3,858	148	197	
6-Mar	613	9	517	10	4,636	197	309	
7-Mar	949	16	613	17	5,833	233	434	
8-Mar	1,126	19	848	25	7,375	366	544	
9-Mar	1,412	30	1,231	30	9,172	463	728	
10-Mar	1,784	33	1,646	35	10,149	631	1,010	
11-Mar	2,281	49	2,277	55	12,462	827	1,311	

12-Mar	2,876	61	3,059	86	15,113	1,016	1,701
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*

Sent from Mail for Windows 10

From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that’s what we’ve got

POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

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HOME >> **CHINA**,**SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

369

<image003.jpg>

<image004.jpg>

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan

Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ____________

Cell: ____________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson Carter Mecher Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN ____________________ Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu;

Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar
Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson
Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

Get Outlook for Android

<image005.jpg>

From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher
Dr. Eva Lee
Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W

<gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
rdarling@patronusmedical.com
https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee <evalee- wrote:

We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian. wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

Get Outlook for Android

<image006.jpg>

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 7:03:58 AM

To: Carter Mecher

Cc:
Caneva, Duane
<duane.caneva@hq.dhs.gov>; McDonald,
Eric <Eric.McDonald@sdcounty.ca.gov>;
Richard Tubb
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CHRISTOPHER ALLEN
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Ralph S <rbaric@email.unc.edu>; Hunt,
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LLogandakar
Venkayya, Rajeev
<rajeev.venkayya@takeda.com>; Ronny
Jackson
Brian Benson
Dr. Eva K
Lee
Subject: Re: Red Dawn Responding,
Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher __________ wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.;

Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

---

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb <bg.richard. Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee

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Eva K Lee <evalee-

Subject: Red Dawn Responding,
Start 16 March

New string. Please use this going forward.

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<COVID 3.jpg>

To: Gruber,David (DSHS)[David.Gruber@dshs.texas.gov]; Richard
Cc: Tracey McNamara[tmcNamara@westernu.edu]; Dr. Eva K Carter
Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian
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From: Caneva, Duane[duane.caneva@hq.dhs.gov]
Sent: Thur 3/19/2020 10:37:19 AM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March

Started new string, Red Dawn Reflux.
Please continue on that one.

From: Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>
Sent: Thursday, March 19, 2020 10:05 AM
To: Richard Tubb
Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee- Carter Mecher Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee eric.mcdonald@sdcounty.ca.gov; William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K.

<mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann
Arthur Kellermann <arthur.kellermann@usuhs.edu>; Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>
Subject: Re: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

Agree that as a partially potential build. Getting supplies and staff for building as more of a challenge than finding space.

Get Outlook for iOS

From: Richard Tubb
Sent: Thursday, March 19, 2020 8:47 AM
To: Gruber,David (DSHS)
Cc: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee; Carter Mecher; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
Subject: Re: Red Dawn Responding, Start 16 March

I've said it before (as have others) so my apologies if you're hearing it again...we have hotels that are empty (and for those on the coasts, cruise ships as well). Bill Land even has some formaldehyde Laden trailers he'd sell cheap!)

Why not use those for quarantine and first level low acuity care?

Sent from my iPad

> On Mar 19, 2020, at 9:30 AM, Gruber,David (DSHS) <David.Gruber@dshs.texas.gov> wrote:
>
> I'd posted this graphic (attached) a bit ago which indicates that the popular prevailing "spread the epi curve" graphics show hospital capacity as flat line (a bit ominous term for a healthcare provider.) The bottom graph shows what I feel a more realistic depiction of hospital capacity over time.
>
> I'm trying to build a hospital, "Drain, Maintain, Build" model for hospital capacity. What drains resources, what can sustain current capacity and what can be used to build capacity. These have individually been discussed but I'm trying to provide a comprehensive presentation and more importantly focused approach to the hospital situation.

Any suggestions, data sources or thoughts. (Working at the state level isn't allowing for time to research these things; I appreciate Duane having created this group to help all of us.)

Thanks,
Dave

From: *Caneva, Duane <duane.caneva@hq.dhs.gov>*
Sent: Wednesday, March 18, 2020 12:50 PM
To: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann Arthur Kellermann <arthur.kellermann@usuhs.edu>; Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>
Subject: RE: Red Dawn Responding, Start 16 March

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DHS Science and Technology Master Question List most recent version attached and available here: https://www.dhs.gov/publication/st-master-question-list-covid-19
For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

---

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Wednesday, March 18, 2020 1:21 PM
To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).
https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 10:09 AM
To: Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee wrote:

> I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).
>
> I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.
>
> https://newton.isye.gatech.edu/DrLee/
> mobile:
>
> Sent with ProtonMail Secure Email.
>
> ------- Original Message -------
> On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:
>
>> Some update on screening and testing -
>> 1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.
>>
>> 2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.
>>
>> Will have hospital resource analysis in my next email.
>>
>> Best, Eva
>>
>> https://newton.isye.gatech.edu/DrLee/
>> mobile:
>>
>> Sent with ProtonMail Secure Email.
>>
>> ------- Original Message -------
>> On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:

Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPORTED BY SENTINEL PR											
YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	NUM. OF PROVIDERS	% UN
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	2,907	[illegible]
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	2,938	[illegible]
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	2,962	[illegible]
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	2,992	[illegible]
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	3,003	[illegible]
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	3,018	[illegible]
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	2,986	[illegible]
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	2,981	
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	2,990	[illegible]
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	2,986	[illegible]

2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	2,947	[illegible]
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	2,917	[illegible]
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	2,906	[illegible]
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	2,949	[illegible]
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	2,976	[illegible]
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	2,967	[illegible]
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	2,966	[illegible]
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326	2,956	[illegible]
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647	2,960	[illegible]
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910	2,916	[illegible]
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851	2,914	[illegible]
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047	2,826	[illegible]
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951	2,625	

Sent from Mail for Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)
Sent: Wednesday, March 18, 2020 11:27 AM
To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry

Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher
Sent: Tuesday, March 17, 2020 7:42 PM
To: Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee- Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov)

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Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	C
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	

23-Feb	12	1	2		155	3	35
24-Feb	12	1	3		229	7	53
25-Feb	14	1	7		322	11	57
26-Feb	18	2	13		453	12	60
27-Feb	38	2	23		655	17	60
28-Feb	57	2	32		889	21	63
29-Feb	100	2	45		1,128	29	68
1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	103
4-Mar	285	4	202		3,089	107	154
5-Mar	423	7	248	1	3,858	148	197
6-Mar	613	9	517	10	4,636	197	309
7-Mar	949	16	613	17	5,833	233	434
8-Mar	1,126	19	848	25	7,375	366	544
9-Mar	1,412	30	1,231	30	9,172	463	728
10-Mar	1,784	33	1,646	35	10,149	631	1,010
11-Mar	2,281	49	2,277	55			
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,244*

Sent from Mail for Windows 10

From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann
Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

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Channels

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HOME >> **CHINA**,**SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha Source:Global Times Published: 2020/2/29 0:33:48

369

<image003.jpg>
<image004.jpg>

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong, director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

> On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ____________

Cell: ____________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee Rob Darling, MD <rdarling@patronusmedical.com>

Cc: Brian Benson Carter Mecher

Dr. Eva Lee

Caneva, Duane (DHS.GOV)

<duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb

William Lang <wlang@worldclinic.com>;

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Richard Hatchett <richard.hatchett@cepi.net>;

Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin

HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar

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Andy Desjardins, MD

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Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

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<image005.jpg>

From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee
Cc: Brian Benson Tracey McNamara <tmcNamara@westernu.edu>; Carter Mecher Dr. Eva Lee Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu <jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH)

<steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

Office:
Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
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On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee <evalee- wrote:

> We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of

these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian. wrote:

> Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?
>
>> On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

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<image006.jpg>

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher

Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb <bg.richard. Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_1

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Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson
Brian Benson
Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was

the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee

Sent: Tuesday, March 17, 2020 9:09 AM

To: Carter Mecher

Cc: Caneva, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; Gruber,David (DSHS); CHRISTOPHER ALLEN; Borio, Luciana; Tracey McNamara; Baric, Ralph S; Hunt, Richard

(OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David; CharitytA@CDPH; Gregory J; Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen,tDanielt(OS/ASPR/SPPR); DeBord,Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. Eva K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved

for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

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Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

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Sent: Monday, March 16, 2020 10:54 PM

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Subject: Red Dawn Responding,
Start 16 March

New string. Please use this going forward.

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<COVID 3.jpg>

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From: Jamison
Sent: Thur 3/19/2020 12:05:32 PM (UTC-04:00)
Subject: Re: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

Contact tracing solutions provide some promise toward sustainable COVID-19 containment:
https://github.com/BDI-pathogens/covid-19_instant_tracing/blob/master/Policy%20forum%20-%20COVID-19%20containment%20by%20herd%20protection.pdf

Could the US overcome the ethical and socially acceptable barriers to 60% adoption?
Personally, I'm concerned about the government working with big tech to drive such efforts given track records in (not?) balancing privacy with value capture (https://www.washingtonpost.com/technology/2020/03/17/white-house-location-data-coronavirus/).

Alternative… First thoughts towards a protocol/standard for privacy-respecting contact tracing apps:
1. Store encrypted personal location data locally on the device.
2. Only retain data for a rolling time horizon (~21 days = max(incubation) + 7)
3. Provide regular COVID-19/ILI self-assessment & self-reporting of clinical test request/administration/result
   a. There is potential here to integrate with Medical & Public Health provider data management activity (link to user_id / public key)
4. For identified high-risk users, send *minimal, anonymized, secure* location data to central server(s)
   a. Minimal: Only send location data from likely infectious period(s) (if timing is known for symptom onset or high-risk contact)
   b. Anonymized: Obscure location data for most common locations (i.e. home/work — index data on location boundaries)
   c. Secure: Location data is already encrypted, share decryption key with secure key management server(s)
5. Apps regularly query for high-risk movement overlapping with their own location movement boundaries
   a. If results exist, the app requests keys (audited), decrypts data, & compares detailed location and timing for high risk
   b. Update the user's infection risk rating(s) based on new geo-temporal contact interactions
...

Corollaries:
- Minimal sharing of anonymized high-value location data, encryption protected
- Individuals can audit others' requests of their infectious period location information
- User's shared data can be expired and/or deleted with kill-switch (i.e. removal of decryption key)
- Requests for communication with location contacts can be initiated (without providing prior identifying information)
- Near-real-time heat maps of high-risk areas can inform individual movement decisions & localized policy shifts

Hope this is useful food for thought. Or just a start towards discussing some standards for inter-op of solutions.

On March 19, 2020 at 08:36:39, Caneva, Duane (duane.caneva@hq.dhs.gov) wrote:

Please use this string going forward as of March 19, 2020, 10:35 EDT.

Duane C. Caneva, MD, MS

Chief Medical Officer

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From: 1974usna

Sent: Thur 3/19/2020 12:31:54 PM (UTC-04:00)

Subject: NPI New Statistical Analysis STudy

Imperial-College-COVID19-NPI-modelling-16-03-2020.pdf

So much is coming out so fast it is impossible to read everything, but this one caught my eye. Even if the authors assumptions are off by an order of magnitude, it nonetheless reinforces that we likely need to be even firmer on the social distancing side, and that we are going to have to maintain that posture even longer.

If no time to read whole article, read summary and look at graphs on page 7-8.

It appears from open sources that China is trying to get back to normal, so it will be educational to see if their numbers shoot back up - and if they do not, what exactly does that mean?

Impact of non-pharmaceutical interventions (NPIs) to reduce COVID-19 mortality and healthcare demand

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On behalf of the Imperial College COVID-19 Response Team

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Summary

The global impact of COVID-19 has been profound, and the public health threat it represents is the most serious seen in a respiratory virus since the 1918 H1N1 influenza pandemic. Here we present the results of epidemiological modelling which has informed policymaking in the UK and other countries in recent weeks. In the absence of a COVID-19 vaccine, we assess the potential role of a number of public health measures – so-called non-pharmaceutical interventions (NPIs) – aimed at reducing contact rates in the population and thereby reducing transmission of the virus. In the results presented here, we apply a previously published microsimulation model to two countries: the UK (Great Britain specifically) and the US. We conclude that the effectiveness of any one intervention in isolation is likely to be limited, requiring multiple interventions to be combined to have a substantial impact on transmission.

Two fundamental strategies are possible: (a) mitigation, which focuses on slowing but not necessarily stopping epidemic spread – reducing peak healthcare demand while protecting those most at risk of severe disease from infection, and (b) suppression, which aims to reverse epidemic growth, reducing case numbers to low levels and maintaining that situation indefinitely. Each policy has major challenges. We find that that optimal mitigation policies (combining home isolation of suspect cases, home quarantine of those living in the same household as suspect cases, and social distancing of the elderly and others at most risk of severe disease) might reduce peak healthcare demand by 2/3 and deaths by half. However, the resulting mitigated epidemic would still likely result in hundreds of thousands of deaths and health systems (most notably intensive care units) being overwhelmed many times over. For countries able to achieve it, this leaves suppression as the preferred policy option.

We show that in the UK and US context, suppression will minimally require a combination of social distancing of the entire population, home isolation of cases and household quarantine of their family members. This may need to be supplemented by school and university closures, though it should be recognised that such closures may have negative impacts on health systems due to increased

DOI: https://doi.org/10.25561/77482

absenteeism. The major challenge of suppression is that this type of intensive intervention package – or something equivalently effective at reducing transmission – will need to be maintained until a vaccine becomes available (potentially 18 months or more) – given that we predict that transmission will quickly rebound if interventions are relaxed. We show that intermittent social distancing – triggered by trends in disease surveillance – may allow interventions to be relaxed temporarily in relative short time windows, but measures will need to be reintroduced if or when case numbers rebound. Last, while experience in China and now South Korea show that suppression is possible in the short term, it remains to be seen whether it is possible long-term, and whether the social and economic costs of the interventions adopted thus far can be reduced.

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Introduction

The COVID-19 pandemic is now a major global health threat. As of 16th March 2020, there have been 164,837 cases and 6,470 deaths confirmed worldwide. Global spread has been rapid, with 146 countries now having reported at least one case.

The last time the world responded to a global emerging disease epidemic of the scale of the current COVID-19 pandemic with no access to vaccines was the 1918-19 H1N1 influenza pandemic. In that pandemic, some communities, notably in the United States (US), responded with a variety of non-pharmaceutical interventions (NPIs) - measures intended to reduce transmission by reducing contact rates in the general population[1]. Examples of the measures adopted during this time included closing schools, churches, bars and other social venues. Cities in which these interventions were implemented early in the epidemic were successful at reducing case numbers while the interventions remained in place and experienced lower mortality overall[1]. However, transmission rebounded once controls were lifted.

Whilst our understanding of infectious diseases and their prevention is now very different compared to in 1918, most of the countries across the world face the same challenge today with COVID-19, a virus with comparable lethality to H1N1 influenza in 1918. Two fundamental strategies are possible[2]:

(a) **Suppression.** Here the aim is to reduce the reproduction number (the average number of secondary cases each case generates), R, to below 1 and hence to reduce case numbers to low levels or (as for SARS or Ebola) eliminate human-to-human transmission. The main challenge of this approach is that NPIs (and drugs, if available) need to be maintained – at least intermittently - for as long as the virus is circulating in the human population, or until a vaccine becomes available. In the case of COVID-19, it will be at least a 12-18 months before a vaccine is available[3]. Furthermore, there is no guarantee that initial vaccines will have high efficacy.

(b) **Mitigation.** Here the aim is to use NPIs (and vaccines or drugs, if available) not to interrupt transmission completely, but to reduce the health impact of an epidemic, akin to the strategy adopted by some US cities in 1918, and by the world more generally in the 1957, 1968 and 2009 influenza pandemics. In the 2009 pandemic, for instance, early supplies of vaccine were targeted at individuals with pre-existing medical conditions which put them at risk of more severe disease[4]. In this scenario, population immunity builds up through the epidemic, leading to an eventual rapid decline in case numbers and transmission dropping to low levels.

The strategies differ in whether they aim to reduce the reproduction number, R, to below 1 (suppression) – and thus cause case numbers to decline – or to merely slow spread by reducing R, but not to below 1.

In this report, we consider the feasibility and implications of both strategies for COVID-19, looking at a range of NPI measures. It is important to note at the outset that given SARS-CoV-2 is a newly emergent virus, much remains to be understood about its transmission. In addition, the impact of many of the NPIs detailed here depends critically on how people respond to their introduction, which is highly likely to vary between countries and even communities. Last, it is highly likely that there would be significant spontaneous changes in population behaviour even in the absence of government-mandated interventions.

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We do not consider the ethical or economic implications of either strategy here, except to note that there is no easy policy decision to be made. Suppression, while successful to date in China and South Korea, carries with it enormous social and economic costs which may themselves have significant impact on health and well-being in the short and longer-term. Mitigation will never be able to completely protect those at risk from severe disease or death and the resulting mortality may therefore still be high. Instead we focus on feasibility, with a specific focus on what the likely healthcare system impact of the two approaches would be. We present results for Great Britain (GB) and the United States (US), but they are equally applicable to most high-income countries.

Methods

Transmission Model

We modified an individual-based simulation model developed to support pandemic influenza planning[5,6] to explore scenarios for COVID-19 in GB. The basic structure of the model remains as previously published. In brief, individuals reside in areas defined by high-resolution population density data. Contacts with other individuals in the population are made within the household, at school, in the workplace and in the wider community. Census data were used to define the age and household distribution size. Data on average class sizes and staff-student ratios were used to generate a synthetic population of schools distributed proportional to local population density. Data on the distribution of workplace size was used to generate workplaces with commuting distance data used to locate workplaces appropriately across the population. Individuals are assigned to each of these locations at the start of the simulation.

Transmission events occur through contacts made between susceptible and infectious individuals in either the household, workplace, school or randomly in the community, with the latter depending on spatial distance between contacts. Per-capita contacts within schools were assumed to be double those elsewhere in order to reproduce the attack rates in children observed in past influenza pandemics[7]. With the parameterisation above, approximately one third of transmission occurs in the household, one third in schools and workplaces and the remaining third in the community. These contact patterns reproduce those reported in social mixing surveys[8].

We assumed an incubation period of 5.1 days[9,10]. Infectiousness is assumed to occur from 12 hours prior to the onset of symptoms for those that are symptomatic and from 4.6 days after infection in those that are asymptomatic with an infectiousness profile over time that results in a 6.5-day mean generation time. Based on fits to the early growth-rate of the epidemic in Wuhan[10,11], we make a baseline assumption that R_0=2.4 but examine values between 2.0 and 2.6. We assume that symptomatic individuals are 50% more infectious than asymptomatic individuals. Individual infectiousness is assumed to be variable, described by a gamma distribution with mean 1 and shape parameter α=0.25. On recovery from infection, individuals are assumed to be immune to re-infection in the short term. Evidence from the Flu Watch cohort study suggests that re-infection with the same strain of seasonal circulating coronavirus is highly unlikely in the same or following season (Prof Andrew Hayward, personal communication).

Infection was assumed to be seeded in each country at an exponentially growing rate (with a doubling time of 5 days) from early January 2020, with the rate of seeding being calibrated to give local epidemics which reproduced the observed cumulative number of deaths in GB or the US seen by 14th March 2020.

Disease Progression and Healthcare Demand

Analyses of data from China as well as data from those returning on repatriation flights suggest that 40-50% of infections were not identified as cases[12]. This may include asymptomatic infections, mild disease and a level of under-ascertainment. We therefore assume that two-thirds of cases are sufficiently symptomatic to self-isolate (if required by policy) within 1 day of symptom onset, and a mean delay from onset of symptoms to hospitalisation of 5 days. The age-stratified proportion of infections that require hospitalisation and the infection fatality ratio (IFR) were obtained from an analysis of a subset of cases from China[12]. These estimates were corrected for non-uniform attack rates by age and when applied to the GB population result in an IFR of 0.9% with 4.4% of infections hospitalised (Table 1). We assume that 30% of those that are hospitalised will require critical care (invasive mechanical ventilation or ECMO) based on early reports from COVID-19 cases in the UK, China and Italy (Professor Nicholas Hart, personal communication). Based on expert clinical opinion, we assume that 50% of those in critical care will die and an age-dependent proportion of those that do not require critical care die (calculated to match the overall IFR). We calculate bed demand numbers assuming a total duration of stay in hospital of 8 days if critical care is not required and 16 days (with 10 days in ICU) if critical care is required. With 30% of hospitalised cases requiring critical care, we obtain an overall mean duration of hospitalisation of 10.4 days, slightly shorter than the duration from hospital admission to discharge observed for COVID-19 cases internationally[13] (who will have remained in hospital longer to ensure negative tests at discharge) but in line with estimates for general pneumonia admissions[14].

Table 1: Current estimates of the severity of cases. The IFR estimates from Verity et al.[12] have been adjusted to account for a non-uniform attack rate giving an overall IFR of 0.9% (95% credible interval 0.4%-1.4%). Hospitalisation estimates from Verity et al.[12] were also adjusted in this way and scaled to match expected rates in the oldest age-group (80+ years) in a GB/US context. These estimates will be updated as more data accrue.

Age-group (years)	% symptomatic cases requiring hospitalisation	% hospitalised cases requiring critical care	Infection Fatality Ratio
0 to 9	0.1%	5.0%	0.002%
10 to 19	0.3%	5.0%	0.006%
20 to 29	1.2%	5.0%	0.03%
30 to 39	3.2%	5.0%	0.08%
40 to 49	4.9%	6.3%	0.15%
50 to 59	10.2%	12.2%	0.60%
60 to 69	16.6%	27.4%	2.2%
70 to 79	24.3%	43.2%	5.1%
80+	27.3%	70.9%	9.3%

Non-Pharmaceutical Intervention Scenarios

We consider the impact of five different non-pharmaceutical interventions (NPI) implemented individually and in combination (Table 2). In each case, we represent the intervention mechanistically within the simulation, using plausible and largely conservative (i.e. pessimistic) assumptions about the impact of each intervention and compensatory changes in contacts (e.g. in the home) associated with

reducing contact rates in specific settings outside the household. The model reproduces the intervention effect sizes seen in epidemiological studies and in empirical surveys of contact patterns. Two of the interventions (case isolation and voluntary home quarantine) are triggered by the onset of symptoms and are implemented the next day. The other four NPIs (social distancing of those over 70 years, social distancing of the entire population, stopping mass gatherings and closure of schools and universities) are decisions made at the government level. For these interventions we therefore consider surveillance triggers based on testing of patients in critical care (intensive care units, ICUs). We focus on such cases as testing is most complete for the most severely ill patients. When examining mitigation strategies, we assume policies are in force for 3 months, other than social distancing of those over the age of 70 which is assumed to remain in place for one month longer. Suppression strategies are assumed to be in place for 5 months or longer.

Table 2: Summary of NPI interventions considered.

Label	Policy	Description
CI	Case isolation in the home	Symptomatic cases stay at home for 7 days, reducing non-household contacts by 75% for this period. Household contacts remain unchanged. Assume 70% of household comply with the policy.
HQ	Voluntary home quarantine	Following identification of a symptomatic case in the household, all household members remain at home for 14 days. Household contact rates double during this quarantine period, contacts in the community reduce by 75%. Assume 50% of household comply with the policy.
SDO	Social distancing of those over 70 years of age	Reduce contacts by 50% in workplaces, increase household contacts by 25% and reduce other contacts by 75%. Assume 75% compliance with policy.
SD	Social distancing of entire population	All households reduce contact outside household, school or workplace by 75%. School contact rates unchanged, workplace contact rates reduced by 25%. Household contact rates assumed to increase by 25%.
PC	Closure of schools and universities	Closure of all schools, 25% of universities remain open. Household contact rates for student families increase by 50% during closure. Contacts in the community increase by 25% during closure.

Results

In the (unlikely) absence of any control measures or spontaneous changes in individual behaviour, we would expect a peak in mortality (daily deaths) to occur after approximately 3 months (Figure 1A). In such scenarios, given an estimated R_0 of 2.4, we predict 81% of the GB and US populations would be infected over the course of the epidemic. Epidemic timings are approximate given the limitations of surveillance data in both countries: The epidemic is predicted to be broader in the US than in GB and to peak slightly later. This is due to the larger geographic scale of the US, resulting in more distinct localised epidemics across states (Figure 1B) than seen across GB. The higher peak in mortality in GB

is due to the smaller size of the country and its older population compared with the US. In total, in an unmitigated epidemic, we would predict approximately 510,000 deaths in GB and 2.2 million in the US, not accounting for the potential negative effects of health systems being overwhelmed on mortality.

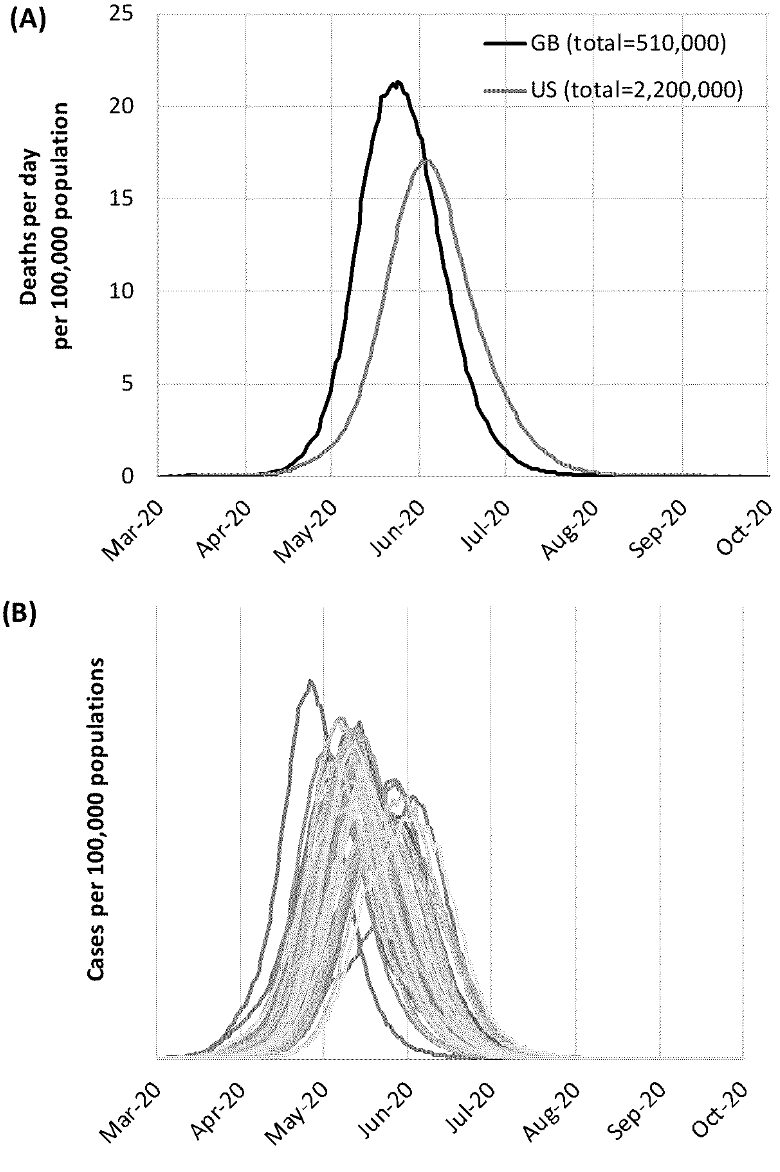

Figure 1: Unmitigated epidemic scenarios for GB and the US. (A) Projected deaths per day per 100,000 population in GB and US. (B) Case epidemic trajectories across the US by state.

For an uncontrolled epidemic, we predict critical care bed capacity would be exceeded as early as the second week in April, with an eventual peak in ICU or critical care bed demand that is over 30 times greater than the maximum supply in both countries (Figure 2).

The aim of mitigation is to reduce the impact of an epidemic by flattening the curve, reducing peak incidence and overall deaths (Figure 2). Since the aim of mitigation is to minimise mortality, the interventions need to remain in place for as much of the epidemic period as possible. Introducing such interventions too early risks allowing transmission to return once they are lifted (if insufficient herd immunity has developed); it is therefore necessary to balance the timing of introduction with the scale

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of disruption imposed and the likely period over which the interventions can be maintained. In this scenario, interventions can limit transmission to the extent that little herd immunity is acquired – leading to the possibility that a second wave of infection is seen once interventions are lifted

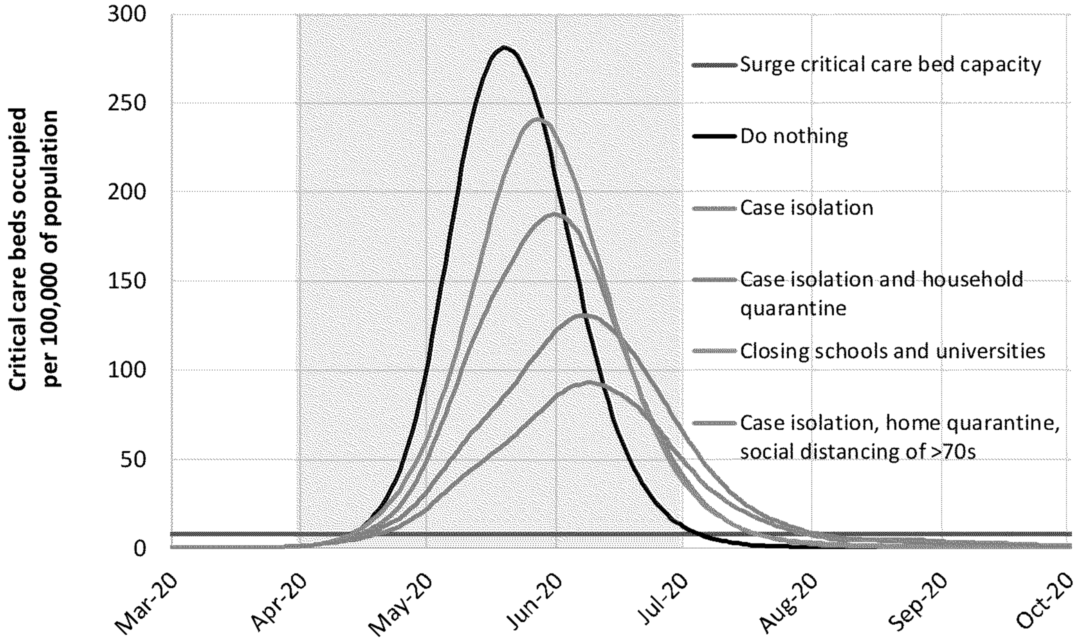

Figure 2: Mitigation strategy scenarios for GB showing critical care (ICU) bed requirements. The black line shows the unmitigated epidemic. The green line shows a mitigation strategy incorporating closure of schools and universities; orange line shows case isolation; yellow line shows case isolation and household quarantine; and the blue line shows case isolation, home quarantine and social distancing of those aged over 70. The blue shading shows the 3-month period in which these interventions are assumed to remain in place.

Table 3 shows the predicted relative impact on both deaths and ICU capacity of a range of single and combined NPIs interventions applied nationally in GB for a 3-month period based on triggers of between 100 and 3000 critical care cases. Conditional on that duration, the most effective combination of interventions is predicted to be a combination of case isolation, home quarantine and social distancing of those most at risk (the over 70s). Whilst the latter has relatively less impact on transmission than other age groups, reducing morbidity and mortality in the highest risk groups reduces both demand on critical care and overall mortality. In combination, this intervention strategy is predicted to reduce peak critical care demand by two-thirds and halve the number of deaths. However, this "optimal" mitigation scenario would still result in an 8-fold higher peak demand on critical care beds over and above the available surge capacity in both GB and the US.

Stopping mass gatherings is predicted to have relatively little impact (results not shown) because the contact-time at such events is relatively small compared to the time spent at home, in schools or workplaces and in other community locations such as bars and restaurants.

Overall, we find that the relative effectiveness of different policies is insensitive to the choice of local trigger (absolute numbers of cases compared to per-capita incidence), R_0 (in the range 2.0-2.6), and varying IFR in the 0.25%-1.0% range.

Table 3. Mitigation options for GB. Relative impact of NPI combinations applied nationally for 3 months in GB on total deaths and peak hospital ICU bed demand for different choices of cumulative ICU case count triggers. The cells show the percentage reduction in peak ICU bed demand for a variety of NPI combinations and for triggers based on the absolute number of ICU cases diagnosed in a county per week. PC=school and university closure, CI=home isolation of cases, HQ=household quarantine, SD=social distancing of the entire population, SDOL70=social distancing of those over 70 years for 4 months (a month more than other interventions). Tables are colour-coded (green=higher effectiveness, red=lower). Absolute numbers are shown in Table A1.

	Trigger (cumulative ICU cases)	PC	CI	CI_HQ	CI_HQ_SD	CI_SD	CI_HQ_SDOL70	PC_CI_HQ_SDOL70
R_0=2.4 Peak beds	100	14%	33%	53%	33%	53%	67%	69%
	300	14%	33%	53%	34%	57%	67%	71%
	1000	14%	33%	53%	39%	64%	67%	77%
	3000	12%	33%	53%	51%	75%	67%	81%
R_0=2.2 Peak beds	100	23%	35%	57%	25%	39%	69%	48%
	300	22%	35%	57%	28%	43%	69%	54%
	1000	21%	35%	57%	34%	53%	69%	63%
	3000	18%	35%	57%	47%	68%	69%	75%
R_0=2.4 Total deaths	100	2%	17%	31%	13%	20%	49%	29%
	300	2%	17%	31%	14%	23%	49%	29%
	1000	2%	17%	31%	15%	26%	50%	30%
	3000	2%	17%	31%	19%	30%	49%	32%
R_0=2.2 Total deaths	100	3%	21%	34%	9%	15%	49%	19%
	300	3%	21%	34%	9%	17%	49%	20%
	1000	4%	21%	34%	11%	21%	49%	22%
	3000	4%	21%	34%	15%	27%	49%	24%

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Given that mitigation is unlikely to be a viable option without overwhelming healthcare systems, suppression is likely necessary in countries able to implement the intensive controls required. Our projections show that to be able to reduce R to close to 1 or below, a combination of case isolation, social distancing of the entire population and either household quarantine or school and university closure are required (Figure 3, Table 4). Measures are assumed to be in place for a 5-month duration. Not accounting for the potential adverse effect on ICU capacity due to absenteeism, school and university closure is predicted to be more effective in achieving suppression than household quarantine. All four interventions combined are predicted to have the largest effect on transmission (Table 4). Such an intensive policy is predicted to result in a reduction in critical care requirements from a peak approximately 3 weeks after the interventions are introduced and a decline thereafter while the intervention policies remain in place. While there are many uncertainties in policy effectiveness, such a combined strategy is the most likely one to ensure that critical care bed requirements would remain within surge capacity.

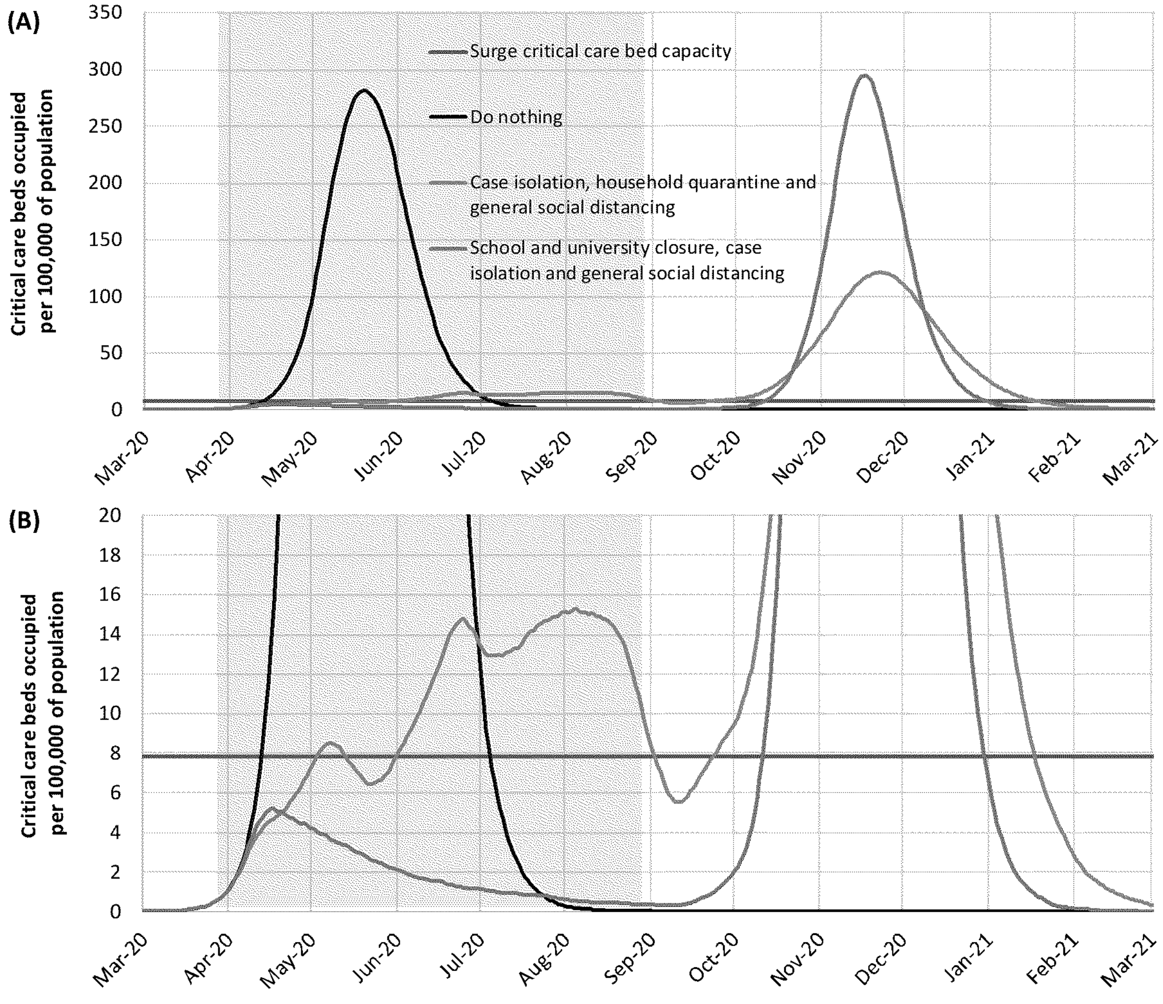

Figure 3: Suppression strategy scenarios for GB showing ICU bed requirements. The black line shows the unmitigated epidemic. Green shows a suppression strategy incorporating closure of schools and universities, case isolation and population-wide social distancing beginning in late March 2020. The orange line shows a containment strategy incorporating case isolation, household quarantine and population-wide social distancing. The red line is the estimated surge ICU bed capacity in GB. The blue shading shows the 5-month period in which these interventions are assumed to remain in place. (B) shows the same data as in panel (A) but zoomed in on the lower levels of the graph. An equivalent figure for the US is shown in the Appendix.

Adding household quarantine to case isolation and social distancing is the next best option, although we predict that there is a risk that surge capacity may be exceeded under this policy option (Figure 3 and Table 4). Combining all four interventions (social distancing of the entire population, case isolation, household quarantine and school and university closure) is predicted to have the largest impact, short of a complete lockdown which additionally prevents people going to work.

Once interventions are relaxed (in the example in Figure 3, from September onwards), infections begin to rise, resulting in a predicted peak epidemic later in the year. The more successful a strategy is at temporary suppression, the larger the later epidemic is predicted to be in the absence of vaccination, due to lesser build-up of herd immunity.

Given suppression policies may need to be maintained for many months, we examined the impact of an adaptive policy in which social distancing (plus school and university closure, if used) is only initiated after weekly confirmed case incidence in ICU patients (a group of patients highly likely to be tested) exceeds a certain "on" threshold, and is relaxed when ICU case incidence falls below a certain "off" threshold (Figure 4). Case-based policies of home isolation of symptomatic cases and household quarantine (if adopted) are continued throughout.

Such policies are robust to uncertainty in both the reproduction number, R_0 (Table 4) and in the severity of the virus (i.e. the proportion of cases requiring ICU admission, not shown). Table 3 illustrates that suppression policies are best triggered early in the epidemic, with a cumulative total of 200 ICU cases per week being the latest point at which policies can be triggered and still keep peak ICU demand below GB surge limits in the case of a relatively high R_0 value of 2.6. Expected total deaths are also reduced for lower triggers, though deaths for all the policies considered are much lower than for an uncontrolled epidemic. The right panel of Table 4 shows that social distancing (plus school and university closure, if used) need to be in force for the majority of the 2 years of the simulation, but that the proportion of time these measures are in force is reduced for more effective interventions and for lower values of R_0. Table 5 shows that total deaths are reduced with lower "off" triggers; however, this also leads to longer periods during which social distancing is in place. Peak ICU demand and the proportion of time social distancing is in place are not affected by the choice of "off" trigger.

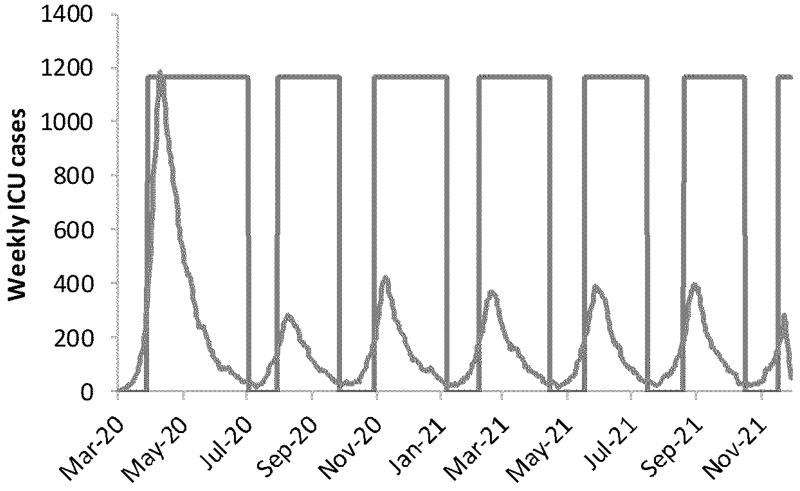

Figure 4: Illustration of adaptive triggering of suppression strategies in GB, for R_0=2.2, a policy of all four interventions considered, an "on" trigger of 100 ICU cases in a week and an "off" trigger of 50 ICU cases. The policy is in force approximate 2/3 of the time. Only social distancing and school/university closure are triggered; other policies remain in force throughout. Weekly ICU incidence is shown in orange, policy triggering in blue.

Table 4. Suppression strategies for GB. Impact of three different policy option (case isolation + home quarantine + social distancing, school/university closure + case isolation + social distancing, and all four interventions) on thetotal number of deaths seen in a 2-year period (left panel) and peak demand for ICU beds (centre panel). Social distancing and school/university closure are triggered at a national level when weekly numbers of new COVID-19 cases diagnosed in ICUs exceed the thresholds listed under "On trigger" and are suspended when weekly ICU cases drop to 25% of that trigger value. Other policies are assumed to start in late March and remain in place. The right panel shows the proportion of time after policy start that social distancing is in placePeak GB ICU surge capacity is approximately 5000 beds.Results are qualitatively similar for the US.

		Total deaths				Peak ICU beds				Proportion of time with SD in place		
R_0	On Trigger	Do nothing	CI_HQ_SD	PC_CI_SD	PC_CI_HQ_SD	Do nothing	CI_HQ_SD	PC_CI_SD	PC_CI_HQ_SD	CI_HQ_SD	PC_CI_SD	PC_CI_HQ_SD
2	60	410,000	47,000	6,400	5,600	130,000	3,300	930	920	96%	69%	58%
	100	410,000	47,000	9,900	8,300	130,000	3,500	1,300	1,300	96%	67%	61%
	200	410,000	46,000	17,000	14,000	130,000	3,500	1,900	1,900	95%	66%	57%
	300	410,000	45,000	24,000	21,000	130,000	3,500	2,200	2,200	95%	64%	55%
	400	410,000	44,000	30,000	26,000	130,000	3,800	2,900	2,700	94%	63%	55%
2.2	60	460,000	62,000	9,700	6,900	160,000	7,600	1,200	1,100	96%	82%	70%
	100	460,000	61,000	13,000	10,000	160,000	7,700	1,600	1,600	96%	80%	66%
	200	460,000	64,000	23,000	17,000	160,000	7,700	2,600	2,300	89%	76%	64%
	300	460,000	65,000	32,000	26,000	160,000	7,300	3,500	3,000	89%	74%	64%
	400	460,000	68,000	39,000	31,000	160,000	7,300	3,700	3,400	82%	72%	62%
2.4	60	510,000	85,000	12,000	8,700	180,000	11,000	1,200	1,200	87%	89%	78%
	100	510,000	87,000	19,000	13,000	180,000	11,000	2,000	1,800	83%	88%	77%
	200	510,000	90,000	30,000	24,000	180,000	9,700	3,500	3,200	77%	82%	74%
	300	510,000	94,000	43,000	34,000	180,000	9,900	4,400	4,000	72%	81%	74%
	400	510,000	98,000	53,000	39,000	180,000	10,000	5,700	4,900	68%	81%	71%
2.6	60	550,000	110,000	20,000	12,000	230,000	15,000	1,500	1,400	68%	94%	85%
	100	550,000	110,000	26,000	16,000	230,000	16,000	1,900	1,800	67%	93%	84%
	200	550,000	120,000	39,000	30,000	230,000	16,000	3,600	3,400	62%	88%	83%
	300	550,000	120,000	56,000	40,000	230,000	17,000	5,500	4,700	59%	87%	80%
	400	550,000	120,000	71,000	48,000	230,000	17,000	7,100	5,600	56%	82%	76%

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Table 5. As Table 4 but showing the effect of varying the 'off' trigger for social distancing and school/university closure on total deaths over 2 years, for R_0=2.4.

		Total deaths		
On trigger	Off trigger as proportion of on trigger	CI_HQ_SD	PC_CI_SD	PC_CI_HQ_SD
60	0.25	85,000	12,000	8,700
	0.5	85,000	15,000	10,000
	0.75	85,000	14,000	11,000
100	0.25	87,000	19,000	13,000
	0.5	87,000	20,000	15,000
	0.75	88,000	21,000	16,000
200	0.25	90,000	30,000	24,000
	0.5	92,000	36,000	27,000
	0.75	94,000	40,000	30,000
300	0.25	94,000	43,000	34,000
	0.5	97,000	48,000	37,000
	0.75	99,000	52,000	39,000
400	0.25	98,000	53,000	39,000
	0.5	100,000	61,000	46,000
	0.75	100,000	65,000	51,000

Discussion

As the COVID-19 pandemic progresses, countries are increasingly implementing a broad range of responses. Our results demonstrate that it will be necessary to layer multiple interventions, regardless of whether suppression or mitigation is the overarching policy goal. However, suppression will require the layering of more intensive and socially disruptive measures than mitigation. The choice of interventions ultimately depends on the relative feasibility of their implementation and their likely effectiveness in different social contexts.

Disentangling the relative effectiveness of different interventions from the experience of countriesto date is challenging because many have implemented multiple (or all) of these measures with varying degrees of success. Through the hospitalisation of all cases (not just those requiring hospital care), China in effect initiated a form of case isolation, reducing onward transmission from cases in the household and in other settings. At the same time, by implementing population-wide social distancing, the opportunity for onward transmission in all locations was rapidly reduced. Several studies have estimated that these interventions reduced R to below 1[15]. In recent days, these measures have begun to be relaxed. Close monitoring of the situation in China in the coming weeks will therefore help to inform strategies in other countries.

Overall, our results suggest that population-wide social distancing applied to the population as a whole would have the largest impact; and in combination with other interventions – notably home isolation of cases and school and university closure – has the potential to suppress transmission below the threshold of R=1 required to rapidly reduce case incidence. A minimum policy for effective suppression

is therefore population-wide social distancing combined with home isolation of cases and school and university closure.

To avoid a rebound in transmission, these policies will need to be maintained until large stocks of vaccine are available to immunise the population – which could be 18 months or more. Adaptive hospital surveillance-based triggers for switching on and off population-wide social distancing and school closure offer greater robustness to uncertainty than fixed duration interventions and can be adapted for regional use (e.g. at the state level in the US). Given local epidemics are not perfectly synchronised, local policies are also more efficient and can achieve comparable levels of suppression to national policies while being in force for a slightly smaller proportion of the time. However, we estimate that for a national GB policy, social distancing would need to be in force for at least 2/3 of the time (for R_0=2.4, see Table 4) until a vaccine was available.

However, there are very large uncertainties around the transmission of this virus, the likely effectiveness of different policies and the extent to which the population spontaneously adopts risk reducing behaviours. This means it is difficult to be definitive about the likely initial duration of measures which will be required, except that it will be several months. Future decisions on when and for how long to relax policies will need to be informed by ongoing surveillance.

The measures used to achieve suppression might also evolve over time. As case numbers fall, it becomes more feasible to adopt intensive testing, contact tracing and quarantine measures akin to the strategies being employed in South Korea today. Technology – such as mobile phone apps that track an individual's interactions with other people in society – might allow such a policy to be more effective and scalable if the associated privacy concerns can be overcome. However, if intensive NPI packages aimed at suppression are not maintained, our analysis suggests that transmission will rapidly rebound, potentially producing an epidemic comparable in scale to what would have been seen had no interventions been adopted.

Long-term suppression may not be a feasible policy option in many countries. Our results show that the alternative relatively short-term (3-month) mitigation policy option might reduce deaths seen in the epidemic by up to half, and peak healthcare demand by two-thirds. The combination of case isolation, household quarantine and social distancing of those at higher risk of severe outcomes (older individuals and those with other underlying health conditions) are the most effective policy combination for epidemic mitigation. Both case isolation and household quarantine are core epidemiological interventions for infectious disease mitigation and act by reducing the potential for onward transmission through reducing the contact rates of those that are known to be infectious (cases) or may be harbouring infection (household contacts). The WHO China Joint Mission Report suggested that 80% of transmission occurred in the household[16], although this was in a context where interpersonal contacts were drastically reduced by the interventions put in place. Social distancing of high-risk groups is predicted to be particularly effective at reducing severe outcomes given the strong evidence of an increased risk with age[12,16] though we predict it would have less effect in reducing population transmission.

We predict that school and university closure will have an impact on the epidemic, under the assumption that children do transmit as much as adults, even if they rarely experience severe disease[12,16]. We find that school and university closure is a more effective strategy to support epidemic suppression than mitigation; when combined with population-wide social distancing, the effect of

school closure is to further amplify the breaking of social contacts between households, and thus supress transmission. However, school closure is predicted to be insufficient to mitigate (never mind supress) an epidemic in isolation; this contrasts with the situation in seasonal influenza epidemics, where children are the key drivers of transmission due to adults having higher immunity levels[17,18].

The optimal timing of interventions differs between suppression and mitigation strategies, as well as depending on the definition of optimal. However, for mitigation, the majority of the effect of such a strategy can be achieved by targeting interventions in a three-month window around the peak of the epidemic. For suppression, early action is important, and interventions need to be in place well before healthcare capacity is overwhelmed. Given the most systematic surveillance occurs in the hospital context, the typical delay from infection to hospitalisation means there is a 2- to 3-week lag between interventions being introduced and the impact being seen in hospitalised case numbers, depending on whether all hospital admissions are tested or only those entering critical care units. In the GB context, this means acting before COVID-19 admissions to ICUs exceed 200 per week.

Perhaps our most significant conclusion is that mitigation is unlikely to be feasible without emergency surge capacity limits of the UK and US healthcare systems being exceeded many times over. In the most effective mitigation strategy examined, which leads to a single, relatively short epidemic (case isolation, household quarantine and social distancing of the elderly), the surge limits for both general ward and ICU beds would be exceeded by at least 8-fold under the more optimistic scenario for critical care requirements that we examined. In addition, even if all patients were able to be treated, we predict there would still be in the order of 250,000 deaths in GB, and 1.1-1.2 million in the US.

In the UK, this conclusion has only been reached in the last few days, with the refinement of estimates of likely ICU demand due to COVID-19 based on experience in Italy and the UK (previous planning estimates assumed half the demand now estimated) and with the NHS providing increasing certainty around the limits of hospital surge capacity.

We therefore conclude that epidemic suppression is the only viable strategy at the current time. The social and economic effects of the measures which are needed to achieve this policy goal will be profound. Many countries have adopted such measures already, but even those countries at an earlier stage of their epidemic (such as the UK) will need to do so imminently.

Our analysis informs the evaluation of both the nature of the measures required to suppress COVID-19 and the likely duration that these measures will need to be in place. Results in this paper have informed policymaking in the UK and other countries in the last weeks. However, we emphasise that is not at all certain that suppression will succeed long term; no public health intervention with such disruptive effects on society has been previously attempted for such a long duration of time. How populations and societies will respond remains unclear.

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Appendix

Figure A1: Suppression strategy scenarios for US showing ICU bed requirements. The black line shows the unmitigated epidemic. Green shows a suppression strategy incorporating closure of schools and universities, case isolation and population-wide social distancing beginning in late March 2020. The orange line shows a containment strategy incorporating case isolation, household quarantine and population-wide social distancing. The red line is the estimated surge ICU bed capacity inUS. The blue shading shows the 5-month period in which these interventions are assumed to remain in place. (B) shows the same data as in panel (A) but zoomed in on the lower levels of the graph.

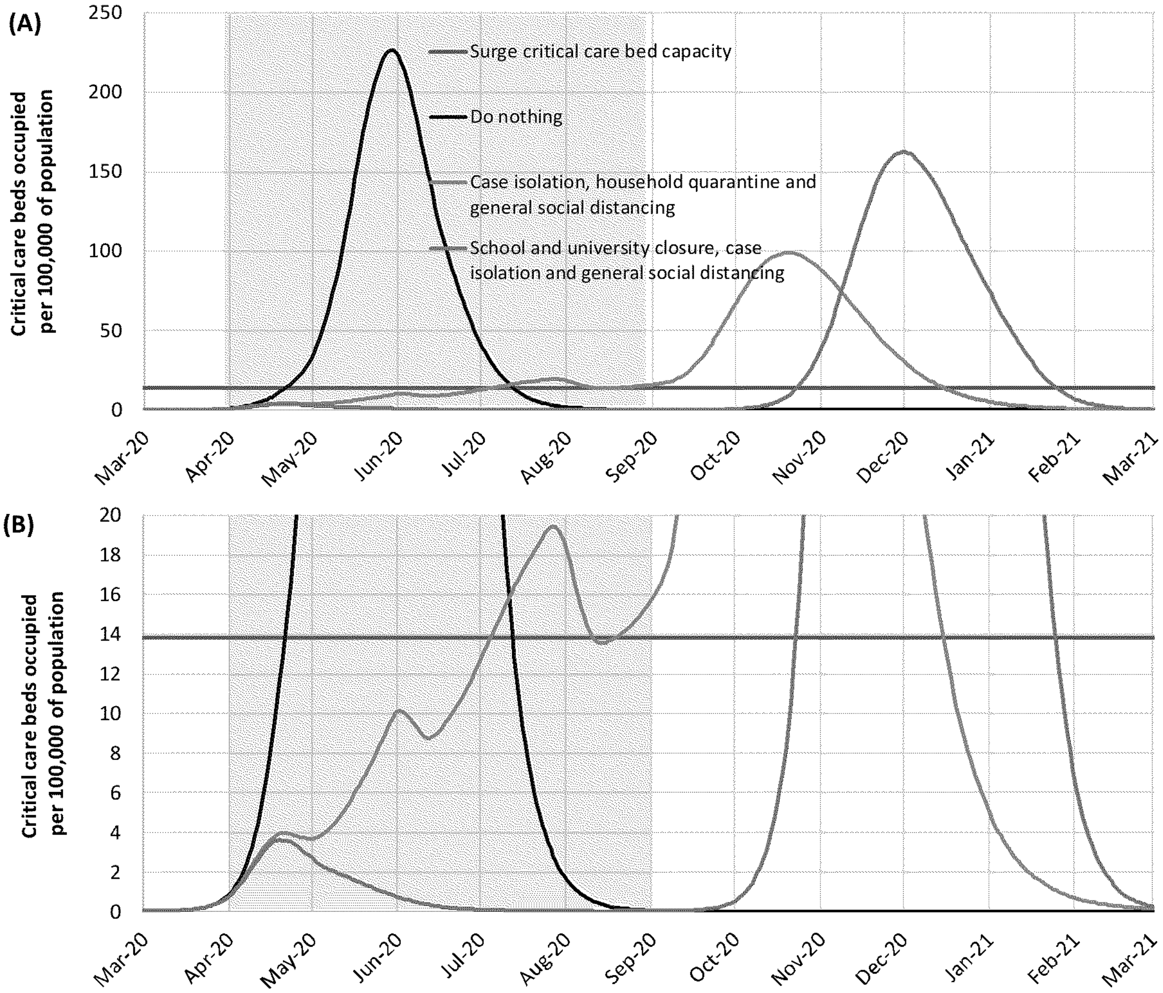

Table A1. Mitigation options for GB. Absolute impact of NPI combinations applied nationally for 3 months in the UK on total deaths and peak hospital ICU bed demand for different choices of cumulative ICU case count triggers. The cells show peak bed demand and total deaths for a variety of NPI combinations and for triggers based on the absolute number of ICU cases diagnosed in a county per week. PC=school and university closure, CI=home isolation of cases, HQ=household quarantine, SD=large-scale general population social distancing, SDOL70=social distancing of those over 70 years for 4 months (a month more than other interventions). Tables are colour-coded (green= higher effectiveness, red=lower).

	Trigger (cumulative ICU cases)	PC	CI	CI_HQ	CI_HQ_SD	CI_SD	CI_HQ_SDOL70	PC_CI_HQ_SDOL70
R0=2.4 Peak beds	100	156	122	85	123	85	61	57
	300	157	122	85	121	78	60	53
	1000	158	122	85	111	65	60	42
	3000	161	122	85	89	45	60	35
R0=2.2 Peak beds	100	125	105	70	120	98	50	83
	300	125	105	70	115	92	50	75
	1000	126	105	70	106	76	49	59
	3000	132	105	70	86	51	49	40
R0=2.4 Total deaths	100	501	421	349	443	406	258	363
	300	499	421	349	440	393	259	360
	1000	498	421	349	432	375	257	356
	3000	498	421	349	415	354	258	347
R0=2.2 Total deaths	100	451	367	308	423	395	238	373
	300	448	367	308	419	384	236	369
	1000	445	367	308	412	366	234	360
	3000	445	367	308	396	340	234	351

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Cc: Caneva, Duane[duane.caneva@hq.dhs.gov]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Rob Darling, MD[rdarling@patronusmedical.com]; Dr. Eva eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; D isbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins, MD[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]; Cramer, Drew W. EOP/OMB[drew.w.cramer2@omb.eop.gov]
From: Carter
Sent: Thur 3/19/2020 2:28:05 PM (UTC-04:00)
Subject: RE: Red Dawn Responding, Start 16 March
COVID-19 Misinformation Analysis.pptx

See attached.

Sent from Mail for Windows 10

From: Tracey McNamara
Sent: Thursday, March 19, 2020 2:13 PM
To: Richard Hatchett; Carter Mecher; William Lang; Dr. Eva K Lee
Cc: Caneva, Duane; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; Mecher, Carter (VA.GOV); Tom Bossert; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Russian?
Tracey

From: Richard Hatchett <richard.hatchett@cepi.net>

Sent: Thursday, March 19, 2020 5:24 AM
To: Carter Mecher William Lang <wlang@worldclinic.com>; Dr. Eva K Lee
Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee eric.mcdonald@sdcounty.ca.gov; Richard Tubb Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; D isbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann Arthur Kellermann <arthur.kellermann@usuhs.edu>; Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>; Cramer, Drew W. EOP/OMB <drew.w.cramer2@omb.eop.gov>
Subject: RE: Red Dawn Responding, Start 16 March

I've had this guidance, not with this attribution, passed to me through private e-mail channels. Misinformation, clearly.

On an unrelated note, a good thread, retweeted by Helen Branswell –

:27880960?cn=ZmxleGlibGVfcmVjc18y&refsrc=email

From: Carter Mecher
Sent: 19 March 2020 12:07
To: William Lang <wlang@worldclinic.com>; Dr. Eva K Lee
Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee eric.mcdonald@sdcounty.ca.gov; Richard Tubb Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <chrisallen jamison.day@gmail.com; Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; D isbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR)

<John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann Arthur Kellermann <arthur.kellermann@usuhs.edu>; Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>; Cramer, Drew W. EOP/OMB <drew.w.cramer2@omb.eop.gov>
Subject: RE: Red Dawn Responding, Start 16 March

Let me run this down—first I have seen. This looks like a scam. This same thing (not with the VA logo) is all over social media (gargling etc.).

Sent from Mail for Windows 10

From: William Lang
Sent: Thursday, March 19, 2020 7:49 AM
To: Carter Mecher; Dr. Eva K Lee
Cc: Caneva, Duane; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Since many active government people on this thread, thought you might be interested in a note I've now been forwarded by 2 different Fortune 100 HR directors citing this as "Government Guidance" that they received yesterday. I've told them that a small VA Clinic in Oregon does not count as "Government Guidance," but this is floating around.

ROSEBURG HEALTHCARE SYSTEM
Brookings VA Clinic
DEPARTMENT OF VETERANS AFFAIRS
840 Railroad St.
PO BOX 634
Brookings, Oregon 97415
Phone

IMPORTANT ANNOUNCEMENT - CORONAVIRUS

Last evening dining out with friends, one of their uncles, who's graduated with a master's degree and who worked in Shenzhen Hospital (Guangdong Province, China) sent him the following notes on Coronavirus for guidance:

1. If you have a runny nose and sputum, you have a common cold.
2. Coronavirus pneumonia is a dry cough with no runny nose.
3. This new virus is not heat-resistant and will be killed by a temperature of just 26/27 degrees. 80 deg F. It hates the sun.
4. If someone sneezes with it, it takes about 10 feet before it drops to the ground and is no longer airborne.
5. If it drops on a metal surface it will live for at least 12 hours - so if you come into contact with any metal surface - wash your hands as soon as you can with a bacterial soap.
6. On fabric it can survive for 6-12 hours. normal laundry detergent will kill it.
7. Drinking warm water is effective for all viruses. Try not to drink liquids with ice.
8. Wash your hands frequently as the virus can only live on your hands for 5-10 minutes, but - a lot can happen during that time - you can rub your eyes, pick your nose unwittingly and so on.
9. You should also gargle as a prevention. A simple solution of salt in warm water will suffice.
10. Can't emphasize enough - drink plenty of water!

THE SYMPTOMS

1. It will first infect the throat, so you'll have a sore throat lasting 3/4 days
2. The virus then blends into a nasal fluid that enters the trachea and then the lungs, causing pneumonia. This takes about 5/6 days further.
3. With the pneumonia comes high fever and difficulty in breathing.
4. The nasal congestion is not like the normal kind. You feel like you're drowning. It's imperative you then seek immediate medical attention.

SPREAD THE WORD - PLEASE SHARE

-Bill

William L. Lang, MD, MHA
Medical Director

WorldClinic | Continuous Connected Care
tel: | fax:
direct (admin and non-urgent patient care):

From: Carter Mecher
Sent: Thursday, March 19, 2020 7:31 AM
To: Dr. Eva K Lee William Lang <wlang@worldclinic.com>
Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO)

<Joseph.Hamel@hhs.gov>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee eric.mcdonald@sdcounty.ca.gov; Richard Tubb Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <chrisallen jamison.day@gmail.com; Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; D isbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann Arthur Kellermann <arthur.kellermann@usuhs.edu>; Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>; Cramer, Drew W. EOP/OMB <drew.w.cramer2@omb.eop.gov>
Subject: RE: Red Dawn Responding, Start 16 March

The JAMA article referenced below noted on March 7 (Lombardy Region)
Current total number of patients with COVID-19 occupying an ICU bed (n = 359)
ICU admissions (n = 556)
[Total cumulative deaths in all of Italy on March 7 reported to be 233; sum of ICU census + deaths > ICU admissions—591 vs. 556] I don't have a breakdown of deaths by region in Italy

Data for all of Italy on March 7
Current total number of patients with COVID-19 occupying an ICU bed (n = 567)
Total cumulative deaths (233)
Sum (800)

Sent from Mail for Windows 10

From: Carter Mecher
Sent: Thursday, March 19, 2020 7:07 AM
To: Dr. Eva K Lee; William Lang
Cc: Caneva, Duane; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis

Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Have been curious about projected demand in ICU care and how well initial forecasts projected the increase in actual demand. Italy recently published their experience thru March 7 with projections to March 20 (about 2 weeks later)

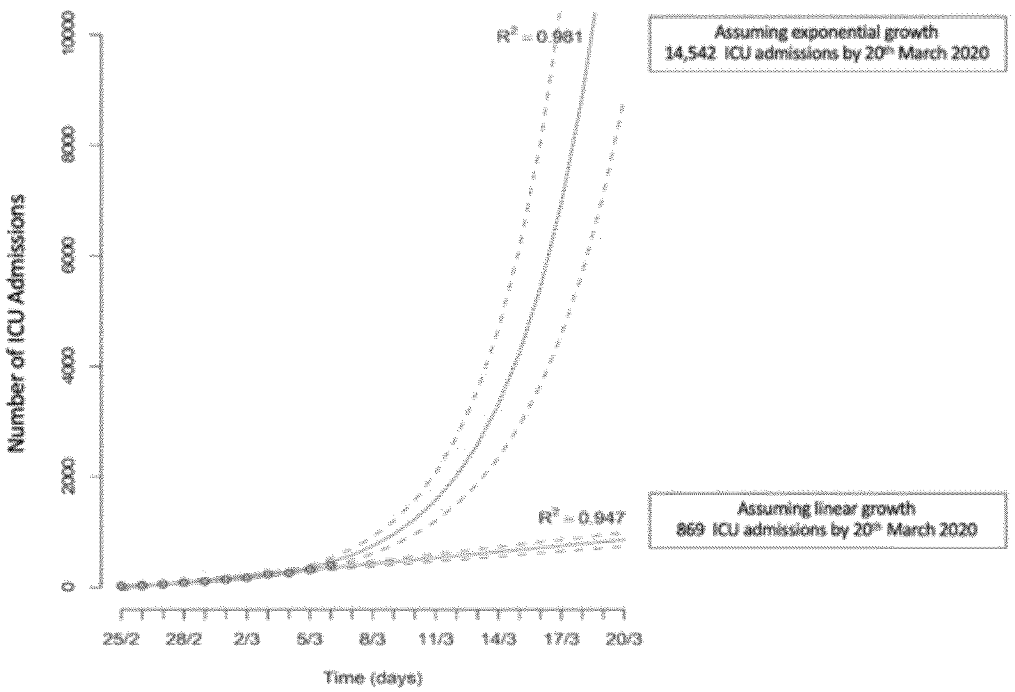
Italy published a paper in JAMA
March 13, 2020

Critical Care Utilization for the COVID-19 Outbreak in Lombardy, Italy Early Experience and Forecast During an Emergency Response

Giacomo Grasselli, MD[1,2]; Antonio Pesenti, MD[1,2]; Maurizio Cecconi, MD[3]

Forecasting ICU Demand Over the Next 2 Weeks
During the first 3 days of the outbreak, starting from February 22, the ICU admissions were 11, 15, and 20 in the COVID-19 Lombardy ICU Network. ICU admissions have increased continuously and exponentially over the first 2 weeks. Based on data to March 7, when 556 COVID-19–positive ICU patients had been admitted to hospitals over the previous 15 days, linear and exponential models were created to estimate further ICU demand (eFigure in the Supplement).

eFigure. Linear and Exponential Models Were Fitted to the Number of ICU Admissions to March 20, 2020



The predicted number of ICU admissions on March 20, 2020, was estimated to be 869 (95%CI: 744-995) with the linear model and was estimated to be 14 542 (95%CI: 8856-23 879) the exponential model. The linear growth rate was estimated to be 36.5 per day (95%CI: 30.0-43.0). The exponential growth rate was estimated to be 0.246 per day (95%CI: 0.221-0.272).

Figure courtesy of Stefano Merler, Bruno Kessler Foundation, Trento, Italy, Epilab-JRU, FEM-FBK Joint Research Unit, Province of Trento, Italy.

They had data thru March 7 and extrapolated ICU demand (admissions) thru March 20. They projected linear growth and exponential growth. We have been tracking the daily updates from Italy and following the reported number of patients in the ICU. [China reported current census of hospitalized patients and critically ill patients; we assumed that the data from Italy was similar (census and not cumulative admissions.] On the March 7, that number reported by Italy was 567, In the JAMA article, the authors state that 556 C19 ICU patients had been admitted. So the numbers are close. If the numbers reported are ICU census numbers (a snapshot), then these numbers are an underestimate of ICU admissions. No data is available on ICU discharges/transfers. If we

assumed that the majority of deaths occurred in the ICU, then a high end approximation of ICU admissions would equal the sum of ICU census and deaths (this would assume all deaths occurred in the ICU). On March 7, that sum was 800. On March 18, that sum was 5,235 (2,257 in ICU).

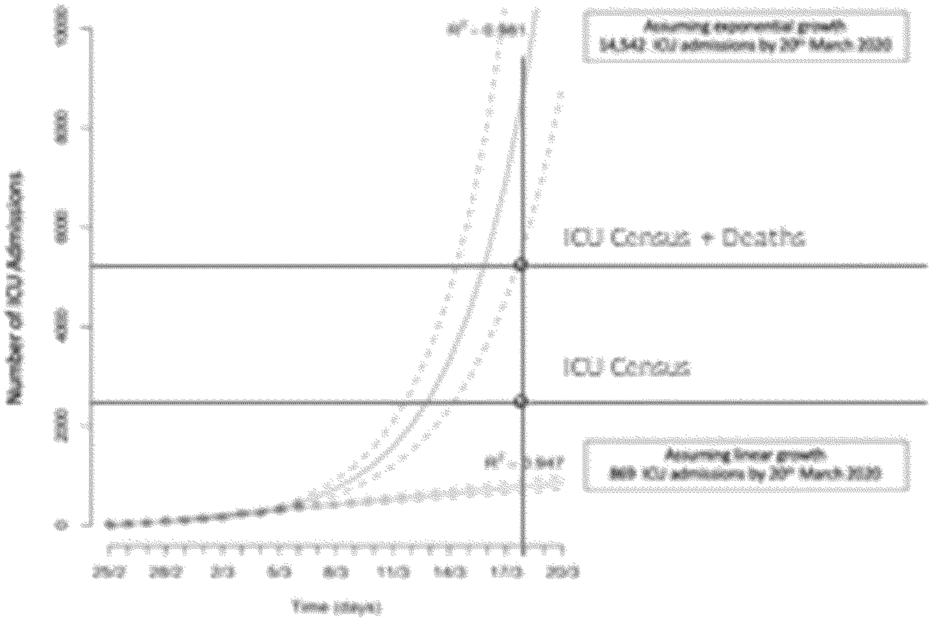
Below are the numbers of what actually occurred thru March 18.

Italy				
Date	Cum Deaths	Cum Confirmed	Critical Condition (ICU)	Sum Deaths + ICU
30-Jan	0	2		0
31-Jan	0	2		0
7-Feb	0	3		0
20-Feb	0	3	2	2
21-Feb	1	20	6	7
22-Feb	2	63	7	9
23-Feb	3	155	26	29
24-Feb	7	229	23	30
25-Feb	11	322	19	30
26-Feb	12	453		12
27-Feb	17	655		17
28-Feb	21	889	64	85
29-Feb	29	1,128	105	134
1-Mar	34	1,694	140	174
2-Mar	52	2,036	166	218
3-Mar	79	2,502		
4-Mar	107	3,089	295	402
5-Mar	148	3,858	351	499
6-Mar	197	4,636	462	659
7-Mar	233	5,833	567	800
8-Mar	366	7,375	650	1,016
9-Mar	463	9,172	733	1,196

10-Mar	631	10,149	877	1,508
11-Mar	827	12,264	1,028	1,855
12-Mar	1,016	15,113	1,153	2,169
13-Mar	1,266	17,660	1,328	2,594
14-Mar	1,441	21,157	1,518	2,959
15-Mar	1,809	24,747	1,672	3,481
16-Mar	2,158	27,980	1,851	4,009
17-Mar	2,503	31,506	2,060	4,563
18-Mar	2,978	35,713	2,257	5,235

So here is where Italy is as of March 18. Given that a significant % of deaths (but not all) would be expected to have occurred in the ICU, the ICU admission curve lies between these two points.

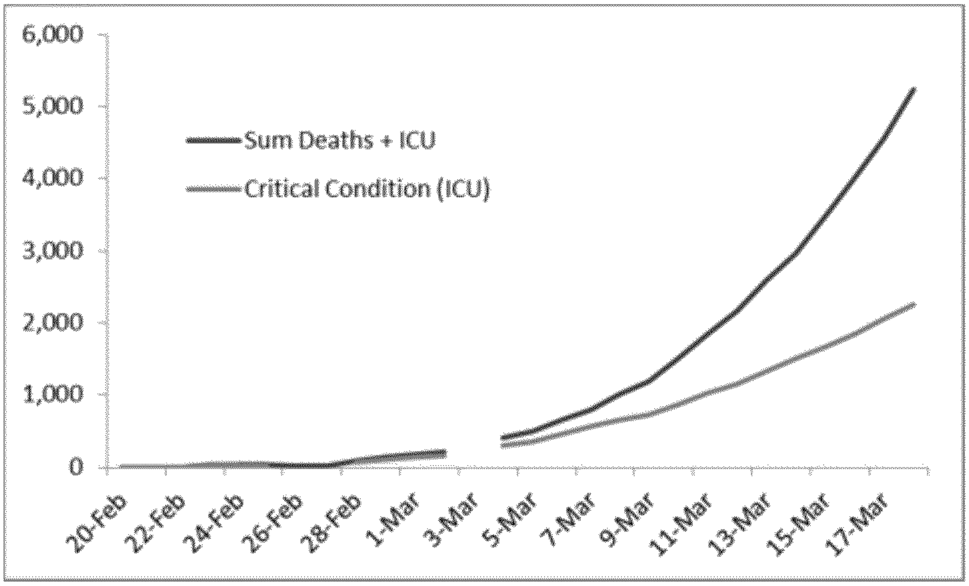
eFigure. Linear and Exponential Models Were Fitted to the Number of ICU Admissions to March 20, 2020



The predicted number of ICU admissions on March 20, 2020, was estimated to be 869 (95%CI: 744-995) with the linear model and was estimated to be 14 542 (95%CI: 8856-23 879) the exponential model. The linear growth rate was estimated to be 36.5 per day (95%CI: 30.0-43.0). The exponential growth rate was estimated to be 0.246 per day (95%CI: 0.221-0.272).

Figure courtesy of Stefano Merler, Bruno Kessler Foundation, Trento, Italy, Epilab-JRU, FEM-FBK Joint Research Unit, Province of Trento, Italy.

Graph of daily data reported by Italy (daily number of patients in ICU and sum of ICU patients + deaths). ICU admission curve lies between these two curves.



Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Thursday, March 19, 2020 12:59 AM
To: William Lang
Cc: Carter Mecher; Caneva, Duane; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: Re: Red Dawn Responding, Start 16 March

This is a study from CDC

CDC analysis shows coronavirus poses serious risk for younger people

https://thehill.com/policy/healthcare/488325-cdc-data-show-coronavirus-poses-serious-risk-for-younger-people

I am not sure if this group has adopted the notion that younger people are protected. I don't think so. China's younger generation is conspiciously smaller due to the one-child policy for so many years. Hence I maintain they have a disporportional (smaller) number of younger population.than in US or other countries in order for us to compare their disease status.

The Diamond Princess shows similar attack rate of young vs the elderly. So we cannot tell if indeed the young fares better. This CDC study supports that the younger generation can be seriously affected by covid-19. And I do believe it remains a serious health risk to those with co-existing health conditions, any age. We simply don't know much detail.

We can't let the herd immunity to play out -- many people will die. I will share some graphs tonight.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Thursday, March 19, 2020 12:26 AM, William Lang <wlang@worldclinic.com> wrote:

> Can anyone comment on the NYT article today noting a higher than expected number of hospitalizations in younger people? The article acknowledges that there is no information on comorbidities in the data, but still a huge question and if true and not related to comorbidities, undermines much of what many have been communicating to groups. Could it be that our message is getting out to the at-risk groups and they are self protecting much more effectively, so what we are seeing is not a change in hospitalization rates by age group, but just higher infection rates in younger ages because they are not being as cautious (maybe too much to hope).
>
> Thanks
>
> -Bill

William L. Lang, MD, MHA
Medical Director
email: wlang@worldclinic.com

WorldClinic | Continuous Connected Care
28 Chargers Road | PO Box 1919 | New London, NH 03257
tel: ___________ | fax: ___________
direct (patient care): ___________ | direct (non-clinical): ___________

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On Mar 18, 2020, at 9:54 PM, Carter Mecher wrote:

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Hotspots—NY, WA, and CA

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	2		2
4-Mar	10		2
5-Mar	19		4
6-Mar	40		7
7-Mar	78		12
8-Mar	105		14
9-Mar	142		25
10-Mar	173		32
11-Mar	216		53
12-Mar	325		88
13-Mar	524		137
14-Mar	613	1	185

15-Mar	729	5	269
16-Mar	950	7	464
17-Mar	1,374	12	923
18-Mar	2,382	20	1,871

	WA State (7.8M)		King County (2.2M)		Snohomish County (0.8M)	
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
21-Jan	1				1	
29-Feb	3		1		2	
1-Mar	6		4	1	2	
2-Mar	18	5	14	5	4	
3-Mar	27	9	21	8	6	1
4-Mar	39	10	31	9	8	1
5-Mar	70	10	51	9	18	1
6-Mar	79	11	58	10	19	1
7-Mar	102	16	71	15	27	1
8-Mar	136	18	83	17	31	1
9-Mar	162	21	116	20	37	1
10-Mar	267	24	190	22	54	1
11-Mar	366	29	234	26	68	2
12-Mar	457	31	270	27	108	3
13-Mar	568	37	328	32	166	4
14-Mar	642	40	387	35	154	4
15-Mar	769	42	420	37	176	4
16-Mar	904	48	488	43	200	4
17-Mar	1,012	52	569	43	254	6

18-Mar	1,187	66	562	56	310	6

	WA State (7.8M)		NYC State (19.4M)		CA State (40M)		US (330M)		Outsid
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases
29-Feb	3		0				68	1	
1-Mar	6		1				73	1	
2-Mar	18	5	1		43		99	6	37
3-Mar	27	9	2		43		103	6	31
4-Mar	39	10	10				154	11	105
5-Mar	70	10	19		60	1	197	12	
6-Mar	79	11	40		69	1	309	15	121
7-Mar	102	16	78		88	1	434	19	166
8-Mar	136	18	105		114	1	544	22	189
9-Mar	162	21	142		133	1	728	27	291
10-Mar	267	24	173		157	2	1,010	31	413
11-Mar	366	29	216		177	3	1,311	38	552
12-Mar	457	31	325		198	4	1,701	40	721
13-Mar	568	37	524		247	5	2,110	48	771
14-Mar	642	40	613	1	288	5	2,952	58	1,409
15-Mar	769	42	729	5	335	6	3,774	69	1,941
16-Mar	904	48	950	7	392	6	4,661	87	2,415
17-Mar	1,012	52	1,374	12	598	13	6,423	108	3,439
18-Mar	1,187	66	2,382	20	757	13	8,715	138	4,389

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 5:16 PM
To: Caneva, Duane
Cc: Carter Mecher; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee;

eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Duane, thanks for sending this article. I suppose John is on this group since he talked about many

things we have talked about:

0. Diamond Princess as in Carter's analysis (I like Carter's :-)).

1. The 1% infection in US population that I and Carter have been talking about for a long time.

2. Sampling testing within communities (which we have discussed since day 1)

3. He doesn't know or he questions if closing schools works (Ok. I do not agree with him)

4. the flattening of the curve. The famous one shown on all the media is not quite right. It is not theoretically correct. The flattening looks different, but ok.

5. It's true current hospital patients are vulnerable, we all agree and hence we advocate pre-emptive **early** NPI implementation

6. Worrying about kids in the malsl -- I don't think this is like H1N1 anymore. Malls are closing also.

7. Herd immunity. From the analysis, it seems that we will need to get to 49% to 89% among different communities to get herd immunity. In that case, many people will die. The clinicians I talked to today say that the lungs of patients are severely damaged -- not immediately, ususally late in the treatment period, like day 10. And they remain badly damaged even when recovered.

8 This statement --
"That's another reason we need data about the exact level of the epidemic activity." Really what data? Every data in such type of pandemic will have noise, will not be perfect, and will never be perfect. Even if we are done now, a year from now, we sill won't have perfect data. That is just a fact. if we need perfect date to operate, we won't be operating most of the time. We need to be able to develop robust models that can describe the situation using partial information. It needs not perfect, but **it should provide useful insights to act.**

That's why Carter's, Richard's graphs putting side-by-side on how Italy's data matches China's are so important. Those curves -- they truly do not lie. James said we're 6-8 weeks behind China, we're indeed, as Carter reminds us everyday (almost) with those little graphs. That's why I advocate early intervention, because I assume when I see one case, we're 14 days behind, and we're, as I can see from the models.

That's also why the intervention graphs I show for each city, they need not be perfect, because we only want to see the patterns of changes, and how it changes.

9. Social distancing alone is not sufficient. We need screening, we need testing and we need to

intercept new infection (put them in self-quarantine or isolation and contact trace), we need all of them so that we have maintain the infection at a rate to our healthcare systems to treat the sick patients properly.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 4:34 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:

https://www.statnews.com/2020/03/17/a-fiasco-in-the-making-as-the-coronavirus-pandemic-takes-hold-we-are-making-decisions-without-reliable-data/

From: Dr. Eva K Lee

Sent: Wednesday, March 18, 2020 3:34 PM

To:

Subject: RE: Red Dawn Responding, Start 16 March

Carter, it is very hard to slam the brake for Italy unless they can pour in the extra beds/medical resources. I am still trying to untangle my thousands of graphs. Once I can select which ones to show, you can see immediatley why all these come together.

Singapore and Hobg Kong are seeing increase too, because now so many sources are coming in. So the global effect is felt to the greatest extent.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 3:24 PM, Carter Mecher wrote:

Italy is still accelerating.

<image001.png>

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:33 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Here is preliminary data on the current state of some of the countries in Europe we are following. UK is really exploding. Spain and Italy numbers continue to climb. Italy is now at 2,978 deaths. Italy is now about to overtake Hubei (3,122 total deaths). Will add US and France data later.

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Ja	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Fe	
	France (65M)		Spain (47M)		Italy (60M)		US (330	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cu
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	
1-Mar	130	2	84		1,694	34	73	
2-Mar	191	3	120		2,036	52	99	
3-Mar	212	4	151		2,502	79	103	
4-Mar	285	4	202		3,089	107	154	
5-Mar	423	7	248	1	3,858	148	197	
6-Mar	613	9	517	10	4,636	197	309	
7-Mar	949	16	613	17	5,833	233	434	
8-Mar	1,126	19	848	25	7,375	366	544	

9-Mar	1,412	30	1,231	30	9,172	463	728
10-Mar	1,784	33	1,646	35	10,149	631	1,010
11-Mar	2,281	49	2,277	55	12,462	827	1,311
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423
18-Mar			13,716	533	35,713	2,978	

Sent from Mail for Windows 10

From: Carter Mecher

Sent: Wednesday, March 18, 2020 2:21 PM

To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin

Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

Just some updates. First NYC. NYC seeing explosive growth in cases and deaths. See story below. Prevalence is much higher than numbers suggest to already have 20 deaths and have 5/1,300 attendees to a conference last week (0.4%) confirmed to have COVID.

5 doctors test positive for coronavirus after attending a meeting in NYC om March 8-11. Roughly 1,300 physicians and educators traveled from across the country and Canada for a Midtown assembly organized by the Council of Residency Directors (CORD) in Emergency Medicine, opening the possibility that hundreds of emergency room doctors have been exposed to the disease.

Below is a summary of NY State and NYC numbers

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	1		1
4-Mar	10		1
5-Mar	19		3
6-Mar	40		4
7-Mar	78		11
8-Mar	105		12
9-Mar	142		19
10-Mar	173		36
11-Mar	216		52
12-Mar	325		95
13-Mar	524		213

14-Mar	613	1	269
15-Mar	729	5	329
16-Mar	950	7	453
17-Mar	1,374	12	644
18-Mar	2,382	20	1,339

Sent from Mail for Windows 10

From: Caneva, Duane

Sent: Wednesday, March 18, 2020 1:52 PM

To: Tracey McNamara; Dr. Eva K Lee; Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)

Subject: RE: Red Dawn Responding, Start 16 March

DHS Science and Technology Master Question List most recent version attached and available here: https://www.dhs.gov/publication/st-master-

question-list-covid-19

For questions you would like added, contact:
justin.taylor@associates.hq.dhs.gov

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Wednesday, March 18, 2020 1:21 PM

To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).

https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee

Sent: Wednesday, March 18, 2020 10:09 AM

To: Carter Mecher

Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>; eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>; alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson

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<ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

Original
Message ---

On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee <evalee-
wrote:

I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).

I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:

Some update on screening and testing -

1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.

2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Wednesday, March 18, 2020 12:12 PM,
Carter Mecher ________________ wrote:

Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.

I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and

only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REPOR										
YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TOTAL PATIENTS	P
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,459,648	
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,438,128	
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,432,289	
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,474,953	
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,437,349	
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,464,287	
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,428,086	
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,486,041	
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,276,965	
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,474,436	
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,456,396	
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,421,322	
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,338,315	
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,423,566	
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,481,576	
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,476,265	
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,486,176	

2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,556,326
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,553,647
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,514,910
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,408,851
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,419,047
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,393,951

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From: Hunt, Richard (OS/ASPR/EMMO)

Sent: Wednesday, March 18, 2020 11:27 AM

To: Carter Mecher; Brian Benson; Hamel, Joseph (OS/ASPR/IO)

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Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher

Sent: Tuesday, March 17, 2020 7:42 PM

To: Brian Benson <brian.
Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>

Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee-
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<jmcleod@patronusmedical.com>;
Lauren Johnston
<ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn
Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		
Date of 1st Death	15-Feb		4-Mar		21-Feb		
	France (65M)		Spain (47M)		Italy (60M)		
	Cum	Cum	Cum	Cum	Cum Cases	Cum	Cum C

	Cases	Deaths	Cases	Deaths		Deaths	
20-Feb	12	1	2		3	0	15
21-Feb	12	1	2		20	1	35
22-Feb	12	1	2		63	2	35
23-Feb	12	1	2		155	3	35
24-Feb	12	1	3		229	7	53
25-Feb	14	1	7		322	11	57
26-Feb	18	2	13		453	12	60
27-Feb	38	2	23		655	17	60
28-Feb	57	2	32		889	21	63
29-Feb	100	2	45		1,128	29	68
1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	10
4-Mar	285	4	202		3,089	107	15
5-Mar	423	7	248	1	3,858	148	19
6-Mar	613	9	517	10	4,636	197	30
7-Mar	949	16	613	17	5,833	233	43
8-Mar	1,126	19	848	25	7,375	366	54
9-Mar	1,412	30	1,231	30	9,172	463	72
10-Mar	1,784	33	1,646	35	10,149	631	1,0
11-Mar	2,281	49	2,277	55	12,462	827	1,3
12-Mar	2,876	61	3,059	86	15,113	1,016	1,70
13-Mar	3,661	79	4,209	120	17,660	1,266	2,1
14-Mar	4,499	91	5,841	191	21,157	1,441	2,9
15-Mar	5,423	127	7,753	288	24,747	1,809	3,7

16-Mar	6,633	148	9,942	342	27,980	2,158	4,6
17-Mar	7,730	175	11,316	510	31,506	2,503	*6,2*

Sent from Mail for Windows 10

From: Brian Benson

Sent: Tuesday, March 17, 2020 3:10 PM

To: Hamel, Joseph (OS/ASPR/IO)

Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John

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Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have

results from when I started testing
for COVID last Thursday.
Thoughts please?

See Germano article he sent
below.

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HOME >> **CHINA**,**SPECIAL-COVERAGE**

Autopsies offer key clues for early stage COVID-19 patients

By Leng Shumei and Zhao Yusha
Source:Global Times Published: 2020/2/29 0:33:48

<image004.jpg>

<image005.jpg>

Doctors check the CT image of a patient's lungs at Leishenshan (Thunder God Mountain) Hospital in Wuhan, capital of central China's Hubei Province on February 9, 2020. Photo: Xinhua

Autopsies show severe damage to COVID-19 patients' lungs and immune system, according to a doctor in Wuhan reached by the Global Times, who called for measures to prevent fibrosis of the lungs at an early stage of the disease.

"The influence of COVID-19 on the human body is like a combination of SARS and AIDS as it damages both the lungs and immune systems," Peng Zhiyong,

director of the intensive care unit of the Zhongnan Hospital of Wuhan University in Wuhan, told the Global Times on Friday

On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager

Assistant Secretary for Preparedness and Response

Office: ____________

Cell: ____________

From: Tracey McNamara <tmcNamara@westernu.edu>

Sent: Tuesday, March 17, 2020 1:41 PM

To: Dr. Eva K Lee <evalee- Rob Darling, MD <rdarling@patronusmedical.com>

Cc: Brian Benson <brian. Carter Mecher Dr. Eva Lee <eva.evalee.lee64@gmail.com>; Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>;

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Lauren Johnston
<ljohnston@patronusmedical.com
>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.

Tracey

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<image006.jpg>

From: Rob Darling, MD
<rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee <evalee-

Cc: Brian Benson
<brian.
Tracey McNamara
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Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

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Fax:
Mobile:

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On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee <evalee- wrote:

> We must optimize strategically the federal resources,s because it is not about just on state,

there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------

On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian. wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got

sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same?

What is the capacity of

DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.

Tracey

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From: Dr. Eva Lee <eva.evalee.lee64@

gmail.com>
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher <cmecher@charter.net>
Cc: 1974usna@gmail.com <1974usna@gmail.com>; Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric

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RANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Rya

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Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jsc

hnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandak

ar <llogandakar@gmail.com>; Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson <ronny.jacksonmd@gmail.com>; Brian Benson <brian.benson@icloud.com>; Dr. Eva K Lee <evalee-gatech@pm.me>

Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many, **I hope political leaders can act and act quickly.** TWe must do so or else we can't help these

other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has

already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know

what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher <cmecher@charter.net> wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what

we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

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It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<1071671 35F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee
Sent: Tuesday, Mar

ch 17, 2020 9:09 AM

To: Carter Mecher

Cc: 19744usna@gmail.com; Cane

va, Duane; McDonald, Eric; Richard Tubb; Rob Darling, MD; William Lang

; Mecher, Carter; Tom Bossert; Richard Hatchett; Lawler, James V; Parker J

r, Gerald W; Hanfling, Dan; Gruber, David (DSHS); CHRISTOPHER ALLEN;

jamison.day@gmail.com; Borio, Luciana; Tracey McNamara; Baric, Ralph S;

—

Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; M.D.; David., C

harity tA@CDPH;

Gregory J;

Walters, William (STATE.GOV);

HAMILTON, C

AMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/

SPPR); Phillips, Sally (OS/ASPR/SPPR);

Matthew JCIV USARMY (USA); Lisa Ko

onin; HARVEY, MELISSA; WOLFE, HERBERT, Eastman, Alexander; EVANS

— , MARIEFRED.; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA);

Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASP

R/SPPR);

Hassell, David (Chris) (OS/ASPR/IO);

Hamel, Joseph (OS/ASPR

/IO); Wade, David; TARANTINO, DAVIDA; KAUSHIK, SANGEETA; Lee, Sc

ott (OS/ASPR/EMMO); Larry G., Ryan Morhard, Steven Jt (tCHFStDPH);

Adam

s, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA

.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay

J., Ignacio, Joselito;

Will Gaskins;

Kevin Montgomery, Logan, Linda L

., LLogandakar; Venkayya, Rajeev; Ronny Jackson; Brian Benson; Dr. E

va K Lee

Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe+US affecting the covid-19 counts - from 100 to 157 -

https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong."

Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases** were people with recent travel history, Lam said.

Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases.

The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

evalee-

https://newton.isye.gatech.edu/DrLee/

mobile: 404-432-6835

Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher <cmecher@charter.net> wrote:

Worth the read.

https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From:

Sent: Monday, March 16, 2020 11:58 PM

To: 'Caneva, Duane'; 'McDonald, Eric'; 'Carter Mecher'; 'Richard Tubb'; 'Rob Darling, MD'; 'William Lang'; 'Mecher, Carter'; 'Tom Bossert'; 'Richard Hatchett'; 'Lawler, James V'; 'Parker Jr, Gerald W'; 'Hanfling, Dan'; 'Gruber,David (DSHS)'; 'Dr. Eva Lee'; 'CHRISTOPHER ALLEN'; jamison 'Borio, Luciana'; 'Tracey McNamara'; 'Baric, Ralph S'; 'Hunt, Richard (OS/ASPR/EMMO)'; 'WILKINSON, THOMAS'; 'M.D.'; 'David'; 'CharitytA@CDPH'; 'Gregory J'; 'Walters, William (STATE.GOV)'; 'HAMILTON, CAMERON'; 'Dodgen,tDanielt(OS/ASPR/SPPR)'; 'DeBord,Kristin (OS/ASPR/SPPR)'; 'Phillips, Sally (OS/ASPR/SPPR)'; 'Matthew J CIV USARMY (USA)'; 'Lisa Koonin'; 'HARVEY, MELISSA'; 'WOLFE, HERBERT'; 'Eastman, Alexander'; 'EVANS, MARIEFRED'; jwleduc@utmb.edu; 'Johnson, Robert (OS/ASPR/BARDA)'; 'Yeskey, Kevin'; 'Disbrow, Gary (OS/ASPR/BARDA)'; 'Redd, John (OS/ASPR/SPPR)'; 'Hassell, David (Chris) (OS/ASPR/IO)'; 'Hamel, Joseph (OS/ASPR/IO)'; 'Wade, David'; 'TARANTINO, DAVID A'; 'KAUSHIK, SANGEETA'; 'Lee, Scott (OS/ASPR/EMMO)'; 'Larry G'; 'Ryan Morhard'; 'Steven Jt(tCHFStDPH)'; 'Adams, Jerome (HHS/OASH)'; 'Mansoura, Monique K.'; 'Fantinato, Jessica (USDA.GOV)'; 'DC'; danny.shiau@usuhs.edu; 'Cordts, Jerome (CTR)'; 'Schnitzer, Jay J.'; 'Ignacio, Joselito'; 'Will Gaskins'; 'Kevin

Montgomery'; 'Logan, Linda L'; 'LLogandakar'; 'Venkayya, Rajeev'; 'Ronny Jackson'; 'Brian Benson'; 'Dr. Eva K Lee'

Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Sent: Monday, March 16, 2020 10:54 PM

To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard

<Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH)
<steven.stack@ky.gov>; Adams, Jerome (HHS/OASH)
<Jerome.Adams@hhs.gov>; Mansoura, Monique K.
<mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV)
<jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>;
danny.shiau@usuhs.edu; Cordts, Jerome (CTR)
<jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J.
<jschnitzer@mitre.org>; Ignacio, Joselito
<joselito.ignacio@fema.dhs.gov>; Will Gaskins
<will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>;
Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar
Venkayya, Rajeev
<rajeev.venkayya@takeda.com>; Ronny Jackson
MothersheadtJerry L.
<1974USNA@gmail.com>; Brian Benson
Dr. Eva K Lee

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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Oak Ridge National Laboratory

An Effort to Discover, Track and Analyze the Spread and Impact of Misinformation related to COVID-19 Outbreak – *Hysteria* Initiative

Prepared by Edmon Begoli, PhD

Initiative Lead

Oak Ridge National Laboratory (ORNL)

ORNL is managed by UT-Battelle, LLC for the US Department of Energy

U.S. DEPARTMENT OF ENERGY

Why this initiative?

WORLD / CORONAVIRUS

A Small Town Was Torn Apart By Coronavirus Rumors

Two days of chaos and riots show what can happen when people don't trust their government but instead believe rumors and misinformation spread on social media.

Christopher Miller
BuzzFeed News Contributor

Reporting From
Novi Sanzhary, Ukraine

Posted on March 9, 2020, at 5:43 p.m. ET

Tweet | Share | Copy

NOVI SANZHARY, Ukraine — The day the riots broke out began just like any other.

Coronavirus dubious claims: Cow dung, urine sell for Rs 500

Mabud Ali has placed packs of cow dung and jars of cow urine on a table by the National Highway 19 that links Delhi and Kolkata. Dubious claims of its treatment and cure have been peddled to innocent and naive people in the city.

IANS | Last Updated: Mar 17, 2020, 08.08 PM IST

Save

Don't drink bleach to prevent coronavirus, poison control center warns

Published 2 days ago | News | FOX 35 Orlando

Myth 1: Saline, garlic, and sesame oil can prevent coronavirus infection

Myth 2: Spraying your body down with alcohol or chlorine, or swallowing bleach, can kill the new coronavirus

No, Keri Hilson, 5G Did Not Cause Coronavirus

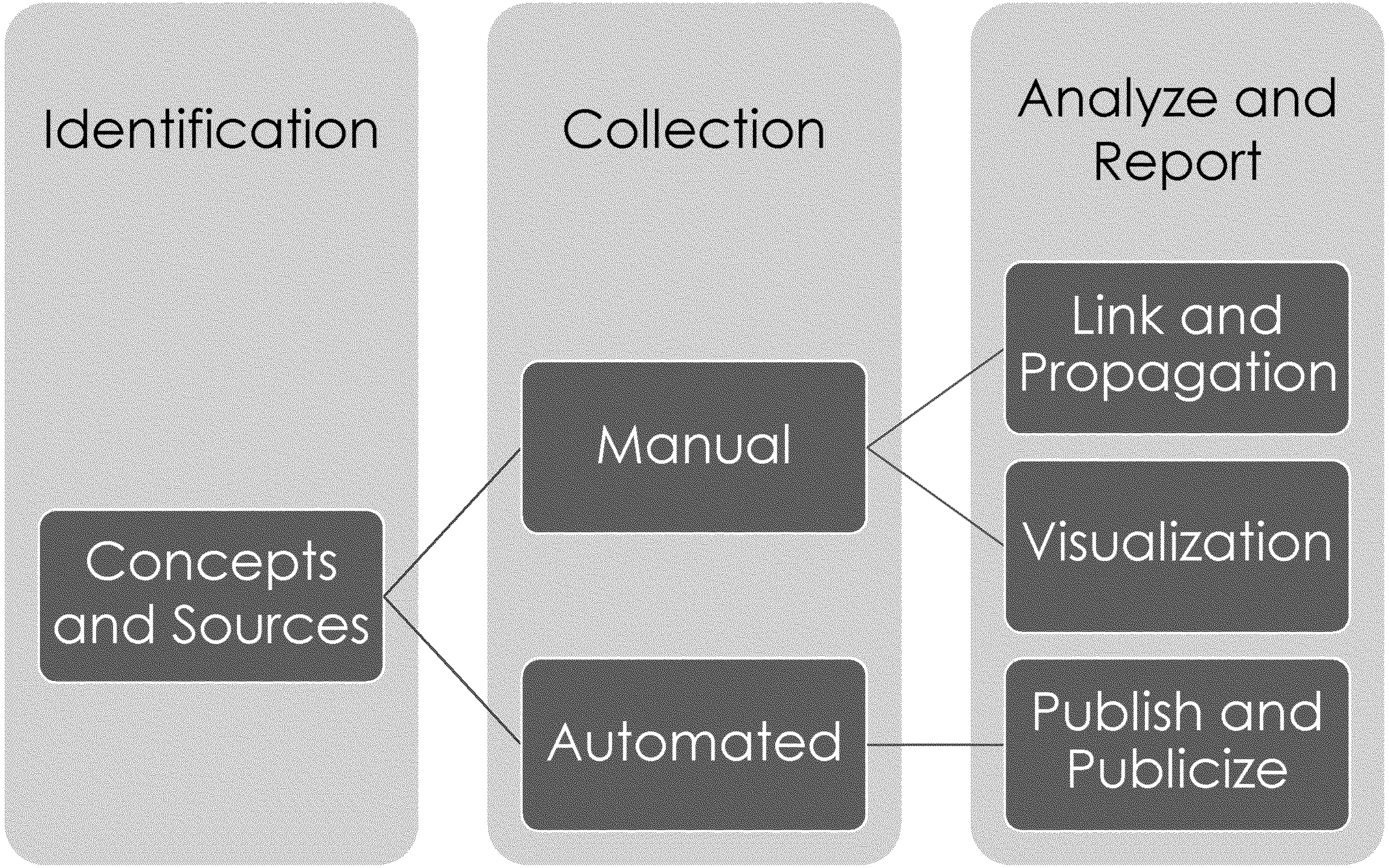
The singer tweeted a conspiracy theory that blamed the COVID-19 pandemic on radiation from new technology.

By Taryn Finley

Our Goals and Objectives

- Track and analyze origins, content, propagation and impacts of false and damagingly wrong information related to COVID-19 pandemic
- Analyze information dynamics – origins, emergence, spread, reach
- Publish and communicate this as widely as possible, including scientific literature

Steps


Identification
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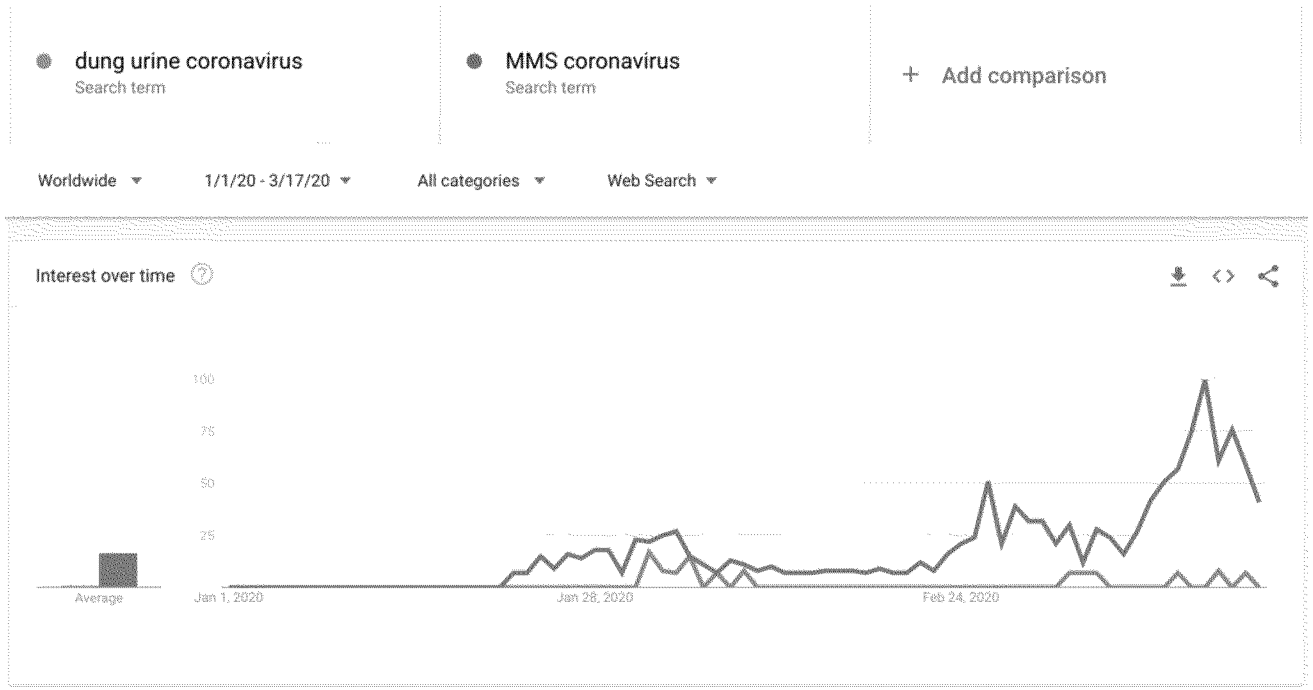
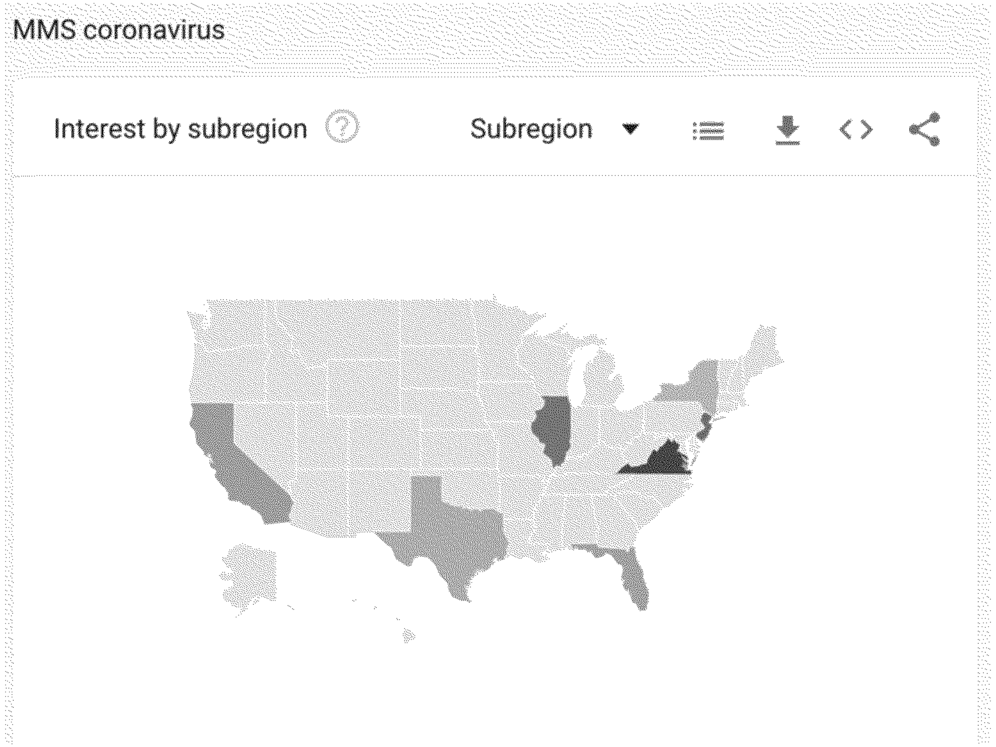
Analyze and Report
Concepts and Sources
Manual
Automated
Link and Propagation
Visualization
Publish and Publicize

A Quick Example – Trends – Two Dangerous Myths





Developed using Google Trends – spikes correlated with COVID-19 flare ups

Products and Results from this Initiative

- An analysis of origins and spreads of misinformation – global, regional, domestic
- Awareness about the new misinformation sources and trends, specially the dangerous ones
- Scientific publications – top journals have expressed interest to fast track the publications

Team Members

- Edmon Begoli, PhD – Lead
- Bobby Bridges, PhD – Mathematical Modelling
- Michael Iannacone – ML/AI Engineer
- Kathryn Knight – Information Science and Theory
- Jarred Smith – ML/AI, Social Media Analysis, ML/AI
- Sudarshan Srinivas, PhD – ML/AI, Source Media Analysis

- Shaun Gleason, PhD – Executive Sponsor

To: Jamison Logan, Linda L[llogan@cvm.tamu.edu]; Dodgen, Daniel (OS/ASPR/SPPR)[daniel.dodgen@hhs.gov]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Eastman, Alexander[alexander.eastman@hq.dhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Walters, William (STATE.GOV)[walterswa2@state.gov]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; DeBord, Kristin (OS/ASPR/SPPR)[kristin.debord@hhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; Jerry Mothershead[jmothershead@patronusmedical.com]; Kevin Montgomery[kevin@collaborate.org]; Phillips, Sally (OS/ASPR/SPPR)[sally.phillips@hhs.gov]; DC[michelle.colby@usda.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Andy Desjardins, MD[adesjardins@patronusmedical.com]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Martin, Greg (state.gov)[martingj@state.gov]; Ryan Morhard[ryan.morhard@weforum.org]; Disbrow, Gary (OS/ASPR/BARDA)[gary.disbrow@hhs.gov]; Borio, Luciana[lborio@iqt.org]; Redd, John (OS/ASPR/SPPR)[john.redd@hhs.gov]; Dr. Eva Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; CHRISTOPHER Richard Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Baric, Ralph S[rbaric@email.unc.edu]; Schnitzer, Jay J.[jschnitzer@mitre.org]; jwleduc@utmb.edu[jwleduc@utmb.edu]; HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; Lisa Koonin[lkoonin1(Larry G[padgetlg@state.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; Lawler, James V[james.lawler@unmc.edu]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; David[dmarcozzi@som.umaryland.edu]; Hassell, David (Chris) (OS/ASPR/IO)[david.hassell@hhs.gov]; William Lang[wlang@worldclinic.com]; Hanfling, Dan[dhanfling@iqt.org]; Will Gaskins[will.gaskins@efiia.com]; Richard Hatchett[richard.hatchett@cepi.net]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[scott.lee@hhs.gov]; Lauren Johnston[ljohnston@patronusmedical.com]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Arthur Kellermann[arthur.kellermann@usuhs.edu]; Tom Johnson, Robert (OS/ASPR/BARDA)[robert.johnson@hhs.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Adams, Jerome (HHS/OASH)[jerome.adams@hhs.gov]; David Gruber (david.gruber@dshs.texas.gov)[david.gruber@dshs.texas.gov]; Wade, David[david.wade@hq.dhs.gov]; Lewis WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; CharitytA@CDPH[charity.dean@cdph.ca.gov]; Jim McLeod[jmcleod@patronusmedical.com]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]; Marinissen, Maria (HHS/OS/OGA)[Maria.Marinissen@hhs.gov]; Sutter, Mark[mark.sutter@hq.dhs.gov]; Mark Keim, MD MBA[mark@disasterdoc.org]
From: Caneva, Duane[duane.caneva@hq.dhs.gov]
Sent: Thur 3/19/2020 2:35:48 PM (UTC-04:00)
Subject: RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT
COVID-19 Misinformation Analysis.pptx

PPT Misinformation Analysis Brief.

From: Caneva, Duane
Sent: Thursday, March 19, 2020 12:51 PM
To: Subject: RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

The President announced today that legislation passed last night removes liability to the makers of N95 masks for an industrial setting to be used in a healthcare setting. This comparison by 3M comparing a surgical N95 to an industrial N95 is very helpful. Shows why this could make available millions of more masks.

https://multimedia.3m.com/mws/media/17945720/surgical-n95-vs-standard-n95-which-to-consider.pdf

---

From: Jamison Day
Sent: Subject: Re: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

Contact tracing solutions provide some promise toward sustainable COVID-19 containment:
https://github.com/BDI-pathogens/covid-19_instant_tracing/blob/master/Policy%20forum%20-%20COVID-19%20containment%20by%20herd%20protection.pdf

Could the US overcome the ethical and socially acceptable barriers to 60% adoption?
Personally, I'm concerned about the government working with big tech to drive such efforts given track records in (not?) balancing privacy with value capture (https://www.washingtonpost.com/technology/2020/03/17/white-house-location-data-coronavirus/).

Alternative… First thoughts towards a protocol/standard for privacy-respecting contact tracing apps:
1. Store encrypted personal location data locally on the device.
2. Only retain data for a rolling time horizon (~21 days = max(incubation) + 7)
3. Provide regular COVID-19/ILI self-assessment & self-reporting of clinical test request/administration/result
   a. There is potential here to integrate with Medical & Public Health provider data management activity (link to user_id / public key)

4. For identified high-risk users, send *minimal, anonymized, secure* location data to central server(s)
   a. Minimal: Only send location data from likely infectious period(s) (if timing is known for symptom onset or high-risk contact)
   b. Anonymized: Obscure location data for most common locations (i.e. home/work — index data on location boundaries)
   c. Secure: Location data is already encrypted, share decryption key with secure key management server(s)
5. Apps regularly query for high-risk movement overlapping with their own location movement boundaries
   a. If results exist, the app requests keys (audited), decrypts data, & compares detailed location and timing for high risk
   b. Update the user's infection risk rating(s) based on new geo-temporal contact interactions

...

Corollaries:
- Minimal sharing of anonymized high-value location data, encryption protected
- Individuals can audit others' requests of their infectious period location information
- User's shared data can be expired and/or deleted with kill-switch (i.e. removal of decryption key)
- Requests for communication with location contacts can be initiated (without providing prior identifying information)
- Near-real-time heat maps of high-risk areas can inform individual movement decisions & localized policy shifts

Hope this is useful food for thought. Or just a start towards discussing some standards for inter-op of solutions.

On March 19, 2020 at 08:36:39, Caneva, Duane (duane.caneva@hq.dhs.gov) wrote:

> Please use this string going forward as of March 19, 2020, 10:35 EDT.
>
> Duane C. Caneva, MD, MS
> Chief Medical Officer
> Department of Homeland Security
> (o)
> (c)
> Duane.Caneva@hq.dhs.gov
> DCaneva@dhs.ic.gov
>
> Executive Assistant: Nichole Burton, nichole.burton2@associates.hq.dhs.gov,
> The information in this e-mail may be privileged and confidential, intended only for the use of the addressee(s) above. Any unauthorized use or disclosure of this information is prohibited. If you have received this e-mail by mistake, please delete it and immediately contact the sender.

OAK RIDGE National Laboratory

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Prepared by Edmon Begoli, PhD

Initiative Lead

Oak Ridge National Laboratory (ORNL)

ORNL is managed by UT-Battelle, LLC for the US Department of Energy

U.S. DEPARTMENT OF ENERGY

Why this initiative?

WORLD / CORONAVIRUS

A Small Town Was Torn Apart By Coronavirus Rumors

Two days of chaos and riots show what can happen when people don't trust their government but instead believe rumors and misinformation spread on social media.

Christopher Miller
BuzzFeed News Contributor

Reporting From
Novi Sanzhary, Ukraine

Posted on March 9, 2020, at 5:43 p.m. ET

Tweet | Share | Copy

NOVI SANZHARY, Ukraine — The day the riots broke out began just like any other.

Coronavirus dubious claims: Cow dung, urine sell for Rs 500

Mabud Ali has placed packs of cow dung and jars of cow urine on a table by the National Highway 19 that links Delhi and Kolkata. Dubious claims of its treatment and cure have been peddled to innocent and naive people in the city.

IANS | Last Updated: Mar 17, 2020, 08.08 PM IST

Save

Don't drink bleach to prevent coronavirus, poison control center warns

Published 2 days ago | News | FOX 35 Orlando

Myth 1: Saline, garlic, and sesame oil can prevent coronavirus infection

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By Taryn Finley

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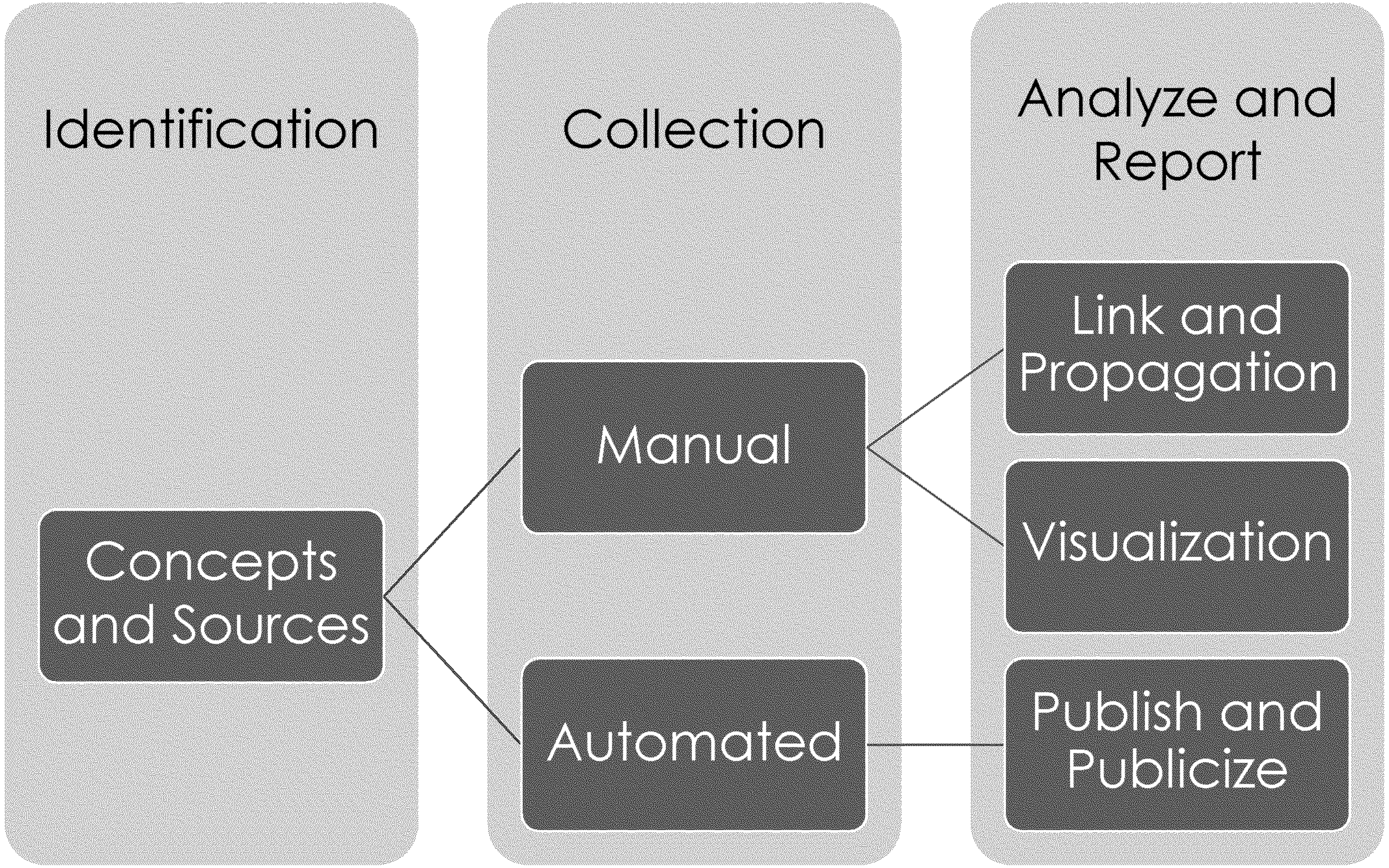
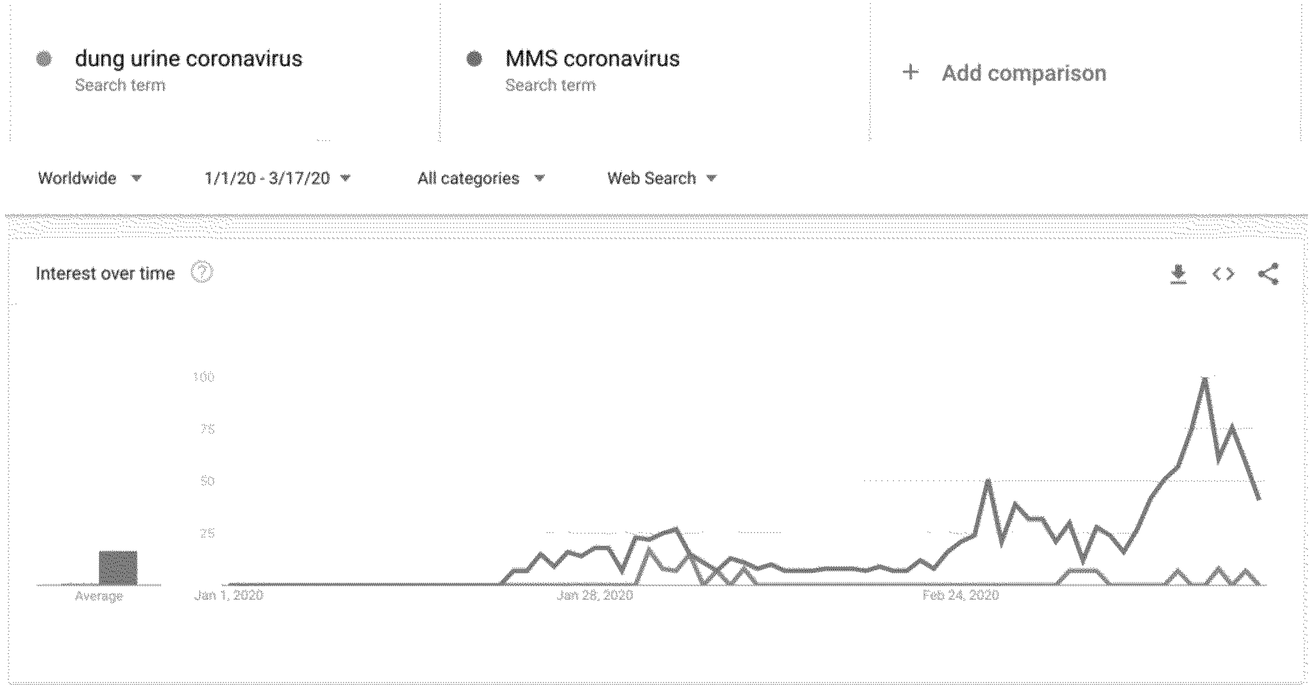
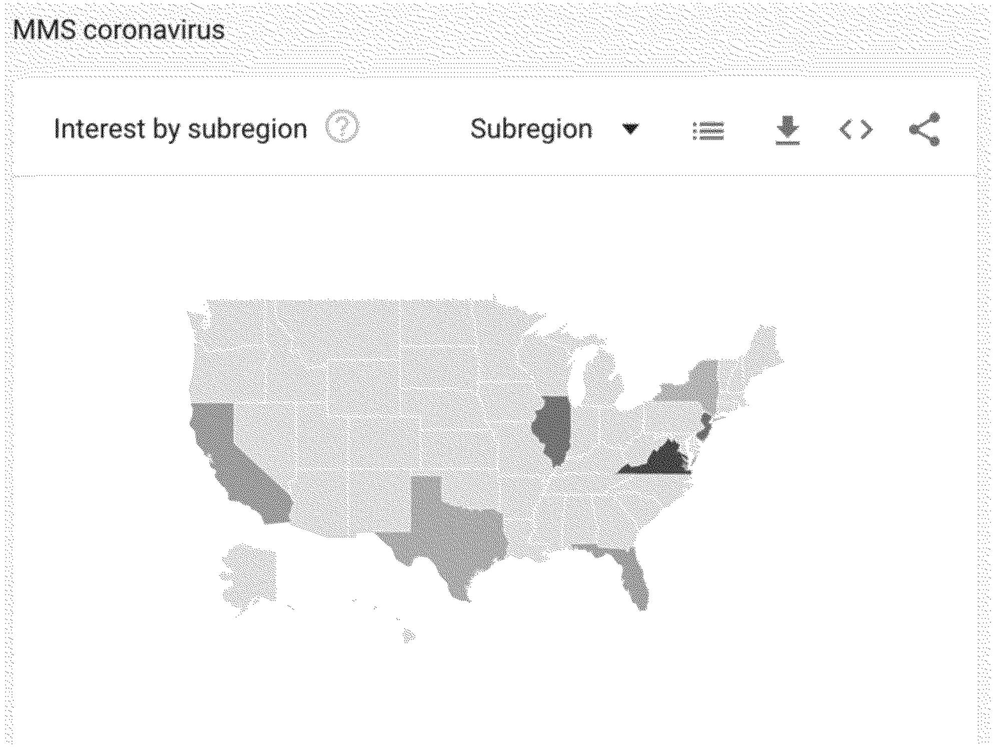
- Publish and communicate this as widely as possible, including scientific literature

Steps


Identification
Collection
Analyze and Report
Concepts and Sources
Manual
Automated
Link and Propagation
Visualization
Publish and Publicize

A Quick Example – Trends – Two Dangerous Myths





Developed using Google Trends – spikes correlated with COVID-19 flare ups

Products and Results from this Initiative

- An analysis of origins and spreads of misinformation – global, regional, domestic
- Awareness about the new misinformation sources and trends, specially the dangerous ones
- Scientific publications – top journals have expressed interest to fast track the publications

Team Members

- Edmon Begoli, PhD – Lead
- Bobby Bridges, PhD – Mathematical Modelling
- Michael Iannacone – ML/AI Engineer
- Kathryn Knight – Information Science and Theory
- Jarred Smith – ML/AI, Social Media Analysis, ML/AI
- Sudarshan Srinivas, PhD – ML/AI, Source Media Analysis

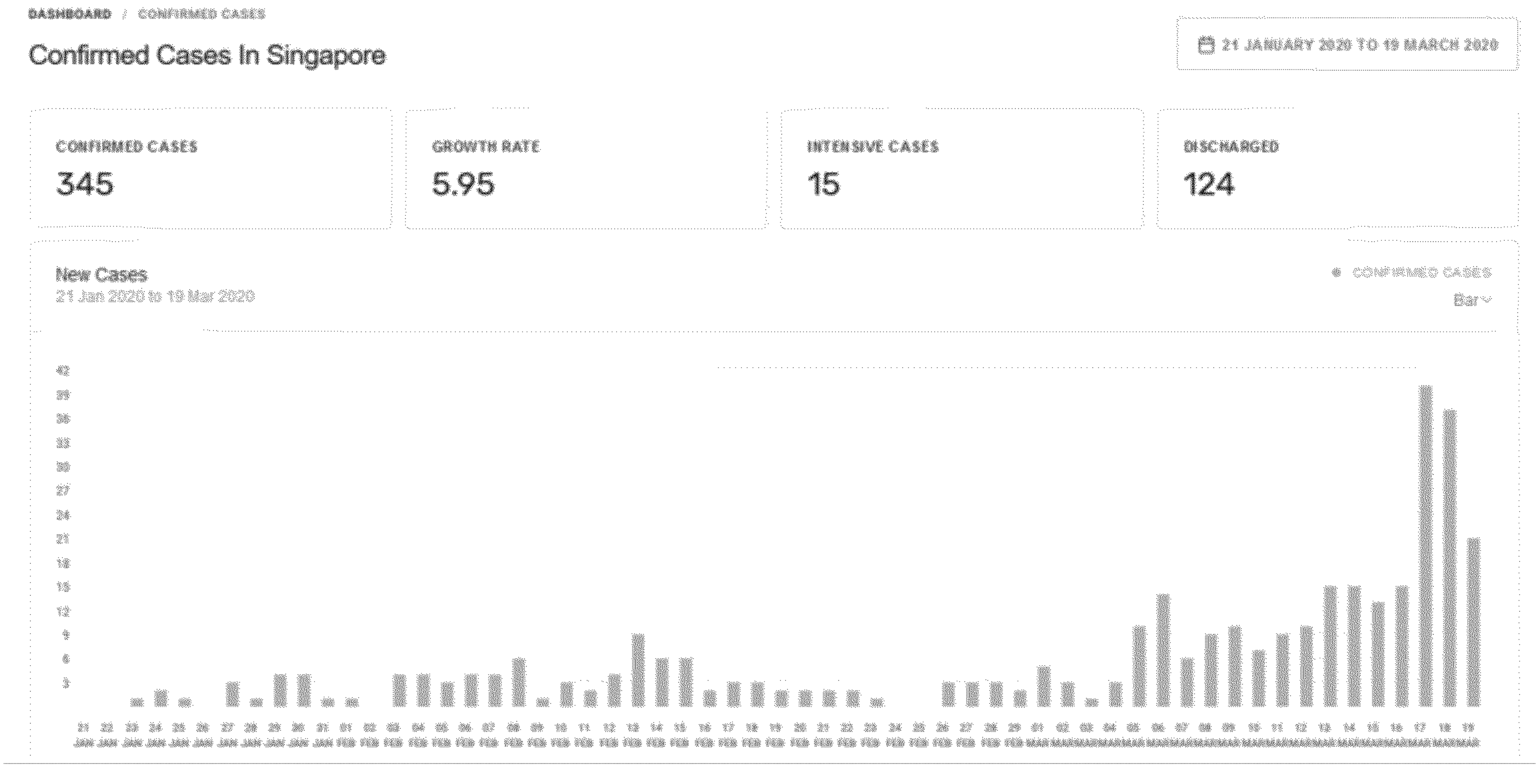
- Shaun Gleason, PhD – Executive Sponsor

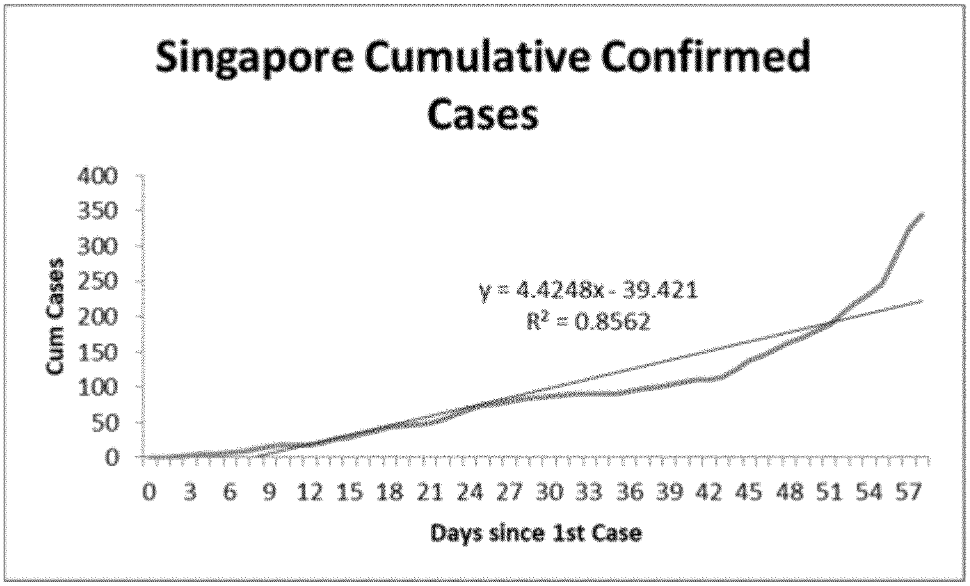
To: Carter Dr. Eva K
Cc: Mecher, Carter[Carter.Mecher@va.gov]; Caneva, Duane[duane.caneva@hq.dhs.gov]; Jamison Logan, Linda L[llogan@cvm.tamu.edu]; Dodgen, Daniel (OS/ASPR/SPPR)[daniel.dodgen@hhs.gov]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Eastman, Alexander[alexander.eastman@hq.dhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Walters, William (STATE.GOV)[walterswa2@state.gov]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; DeBord, Kristin (OS/ASPR/SPPR)[kristin.debord@hhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; Jerry Mothershead[jmothershead@patronusmedical.com]; Kevin Montgomery[kevin@collaborate.org]; Phillips, Sally (OS/ASPR/SPPR)[sally.phillips@hhs.gov]; DC[michelle.colby@usda.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Andy Desjardins, MD[adesjardins@patronusmedical.com]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Martin, Greg (state.gov)[martingj@state.gov]; Ryan Morhard[ryan.morhard@weforum.org]; Disbrow, Gary (OS/ASPR/BARDA)[gary.disbrow@hhs.gov]; Borio, Luciana[lborio@iqt.org]; Redd, John (OS/ASPR/SPPR)[john.redd@hhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; CHRISTOPHER Richard Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Baric, Ralph S[rbaric@email.unc.edu]; Schnitzer, Jay J.[jschnitzer@mitre.org]; jwleduc@utmb.edu[jwleduc@utmb.edu]; HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; Lisa Koonin[lkoonin1(Larry G[padgetlg@state.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; Lawler, James V[james.lawler@unmc.edu]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; David[dmarcozzi@som.umaryland.edu]; Hassell, David (Chris) (OS/ASPR/IO)[david.hassell@hhs.gov]; William Lang[wlang@worldclinic.com]; Hanfling, Dan[dhanfling@iqt.org]; Will Gaskins[will.gaskins@efiia.com]; Richard Hatchett[richard.hatchett@cepi.net]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[scott.lee@hhs.gov]; Lauren Johnston[ljohnston@patronusmedical.com]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Arthur L.. Kellerman MD, MPH, FACEP[arthur.kellermann@usuhs.edu]; Tom Johnson, Robert (OS/ASPR/BARDA)[robert.johnson@hhs.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Adams, Jerome (HHS/OASH)[jerome.adams@hhs.gov]; David Gruber (david.gruber@dshs.texas.gov)[david.gruber@dshs.texas.gov]; Wade, David[david.wade@hq.dhs.gov]; Lewis WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; CharitytA@CDPH[charity.dean@cdph.ca.gov]; Jim McLeod[jmcleod@patronusmedical.com]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]; Marinissen, Maria (HHS/OS/OGA)[Maria.Marinissen@hhs.gov]; Sutter, Mark[mark.sutter@hq.dhs.gov]; Mark Keim, MD MBA[mark@disasterdoc.org]
From: Dr. Eva
Sent: Thur 3/19/2020 3:20:58 PM (UTC-04:00)
Subject: Re: [EXTERNAL] RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT
2020 0301 ResourceSurges.pdf

Guys, I have a million graphs but I am trying to include a few representative ones. This contradicts Neil Ferguson's analysis that beds alone is all tha we need. We MUST have NPI social isolation and then they work wonder. This is a city of 1% -- Eric, this is close to San Diego. I use 30 infected individuals to start and roll out the resources. I can give you many more graphs, please see if this makes sense. Note -- Delay is not good -- resources that come late do not help us. So please policy makers -- I am sure they are acting rapidly as they see the dire situatons in hospitals.

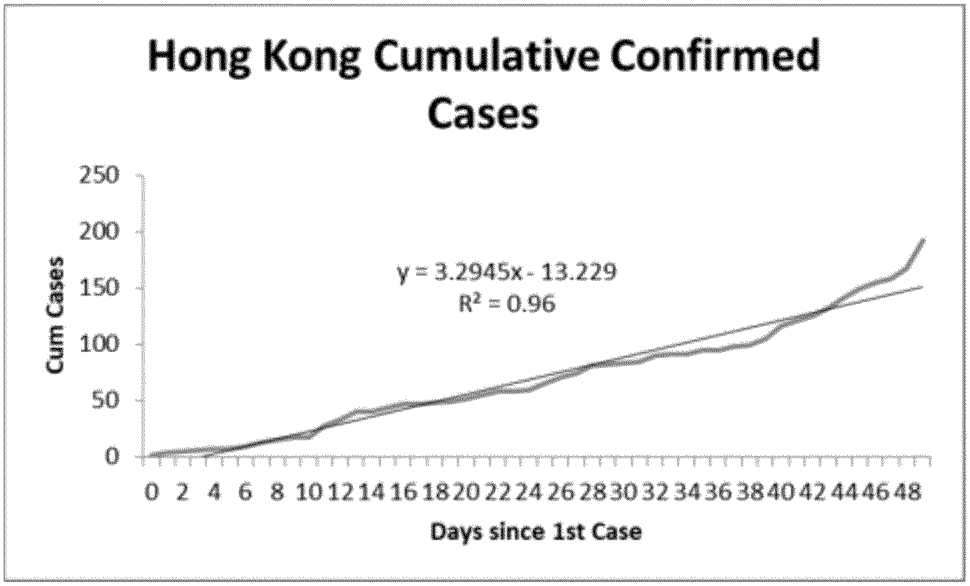
On Thu, Mar 19, 2020 at 3:17 PM Carter Mecher wrote:

Singapore seeing an uptick. Case counts increasing sharply over the past several days.





Hong Kong also seeing an increase, but holding close to linear growth.



Sent from Mail for Windows 10

From: Mecher, Carter
Sent: Thursday, March 19, 2020 1:59 PM
To: Caneva, Duane; Jamison Day; Logan, Linda L; Dodgen, Daniel (OS/ASPR/SPPR); Venkayya, Rajeev; Ronny Jackson; Eastman, Alexander; Mansoura, Monique K.; LLogandakar; Walters, William (STATE.GOV); Parker Jr, Gerald W; DeBord, Kristin (OS/ASPR/SPPR); EVANS, MARIEFRED; Jerry Mothershead; Kevin Montgomery; Phillips, Sally (OS/ASPR/SPPR); DC; Matthew J CIV USARMY (USA); Andy Desjardins, MD; Fantinato, Jessica (USDA.GOV); Yeskey, Kevin; danny.shiau@usuhs.edu; Martin, Greg (state.gov); Ryan Morhard; Disbrow, Gary (OS/ASPR/BARDA); Borio, Luciana; Redd, John (OS/ASPR/SPPR); Dr. Eva Lee; KAUSHIK, SANGEETA; eric.mcdonald@sdcounty.ca.gov; CHRISTOPHER ALLEN; Richard Tubb; Cordts, Jerome (CTR); Baric, Ralph S; Schnitzer, Jay J.; jwleduc@utmb.edu; HARVEY, MELISSA; Lisa Koonin; Larry G; mvcallahan@mgh.harvard.edu; Lawler, James V; Ignacio, Joselito; David; Hassell, David (Chris) (OS/ASPR/IO); William Lang; Hanfling, Dan; Will Gaskins; Richard Hatchett; TARANTINO, DAVID A; Lee, Scott (OS/ASPR/EMMO); Lauren Johnston; Steven Jt(tCHFStDPH); Arthur L.. Kellerman MD, MPH, FACEP; Tom Bossert; Johnson, Robert (OS/ASPR/BARDA); HAMILTON, CAMERON; Adams, Jerome (HHS/OASH); David Gruber (david.gruber@dshs.texas.gov); Wade, David; Lewis Hofmann; WILKINSON, THOMAS; WOLFE, HERBERT; CharitytA@CDPH; Jim McLeod; Taylor, Justin (CTR); Marinissen, Maria (HHS/OS/OGA); Sutter, Mark; Mark Keim, MD MBA;
Subject: RE: [EXTERNAL] RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

I heard the VP announce domestic production of 35M per month for one manufacturer. The other mentioned was a little less. 35M per month is about 1M per day. We have 5,000 hospitals in US so that equates to about 200 N95s per hospital per day. What is our daily burn rate? It helps but likely not nearly enough. Even if we double that—400 per day per hospital. Better, but not enough.

One strategy to reduce PPE demand is to shift outpatient care to virtual care as quickly as we can. How could we turn ILINet around and use it as a means to broadcast to the ILINet providers and get them to move to virtual care—especially for all the ILI? The ILINet providers are seeing about 1.5M patients each week. On an average week in the US, there are 9.2M primary care/family practice visits. So ILINet providers account for about 14% of all the primary care/FP visits in the US. That is a good chunk to start with. Why can't CDC and the state and local PH depts reverse the flow of info back to them to urge them to move quickly to virtual care. We can monitor their effectiveness thru ILINet (monitor for a dramatic drop off in total visits and ILI visits). I'm assuming they are not counting ILI telephone visits in the ILI totals.

Sent with BlackBerry Work
(www.blackberry.com)

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Date: Thursday, Mar 19, 2020, 12:53 PM

To: Jamison Day Logan, Linda L <llogan@cvm.tamu.edu>, Dodgen, Daniel (OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>, Venkayya, Rajeev <rajeev.venkayya@takeda.com>, Ronny Jackson <ronny.jacksonmd@g Eastman, Alexander <alexander.eastman@hq.dhs.gov>, Mansoura, Monique K. <mmansoura@mitre.org>, LLogandakar <llogandakar@gmail.com>, Walters, William (STATE.GOV) <walterswa2@state.gov>, Parker Jr, Gerald W <gparker@cvm.tamu.edu>, DeBord, Kristin (OS/ASPR/SPPR) <kristin.debord@hhs.gov>, EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>, Jerry Mothershead <jmothershead@patronusmedical.com>, Kevin Montgomery <kevin@collaborate.org>, Phillips, Sally (OS/ASPR/SPPR) <sally.phillips@hhs.gov>, DC <michelle.colby@usda.gov>, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>, Andy Desjardins, MD <adesjardins@patronusmedical.com>, Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>, Yeskey, Kevin <kevin.yeskey@hhs.gov>, danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>, Martin, Greg (state.gov) <martingj@state.gov>, Ryan Morhard <ryan.morhard@weforum.org>, Disbrow, Gary (OS/ASPR/BARDA) <gary.disbrow@hhs.gov>, Borio, Luciana <lborio@iqt.org>, Redd, John (OS/ASPR/SPPR) <john.redd@hhs.gov>, Dr. Eva Lee <eva.evalee.lee64@gmail.com>, Mecher, Carter <Carter.Mecher@va.gov>, KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>, eric.mcdonald@sdcounty.ca.gov <eric.mcdonald@sdcounty.ca.gov>, CHRISTOPHER ALLEN <chrisallen_1 Richard Tubb <bg.richard.tubb@gmail.com>, Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>, Baric, Ralph S <rbaric@email.unc.edu>, Schnitzer, Jay J. <jschnitzer@mitre.org>, jwleduc@utmb.edu <jwleduc@utmb.edu>, HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>, Lisa Koonin <lkoonin1@gmail.com>, Larry G <padgetlg@state.gov>, 1974usna@gmail.com <1974usna@gmail.com>, mvcallahan@mgh.harvard.edu <mvcallahan@mgh.harvard.edu>, Lawler, James V <james.lawler@unmc.edu>, Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>, David <dmarcozzi@som.umaryland.edu>, Hassell, David (Chris) (OS/ASPR/IO) <david.hassell@hhs.gov>, William Lang <wlang@worldclinic.com>, Hanfling, Dan <dhanfling@iqt.org>, Will Gaskins <will.gaskins@efiia.com>, Richard Hatchett <richard.hatchett@cepi.net>, TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>, Lee, Scott (OS/ASPR/EMMO) <scott.lee@hhs.gov>, Lauren Johnston <ljohnston@patronusmedical.com>, Steven Jt(tCHFStDPH) <steven.stack@ky.gov>, Arthur L.. Kellerman MD, MPH, FACEP <arthur.kellermann@usuhs.edu>, Tom Bossert Johnson, Robert (OS/ASPR/BARDA) <robert.johnson@hhs.gov>, HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>, Adams, Jerome (HHS/OASH) <jerome.adams@hhs.gov>, David Gruber (david.gruber@dshs.texas.gov) <david.gruber@dshs.texas.gov>, Wade, David <david.wade@hq.dhs.gov>, Lewis Hofmann WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>, WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>, CharitytA@CDPH <charity.dean@cdph.ca.gov>, Jim McLeod <jmcleod@patronusmedical.com>, Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>, Marinissen, Maria (HHS/OS/OGA) <Maria.Marinissen@hhs.gov>, Sutter, Mark <mark.sutter@hq.dhs.gov>, Mark Keim, MD MBA <mark@disasterdoc.org>

Subject: [EXTERNAL] RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

The President announced today that legislation passed last night removes liability to the makers of N95 masks for an industrial setting to be used in a healthcare setting. This comparison by 3M comparing a surgical N95 to an industrial N95 is very helpful. Shows why this could make available millions of more masks.

https://multimedia.3m.com/mws/media/1794572O/surgical-n95-vs-standard-n95-which-to-consider.pdf

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From: Jamison Day
Sent: Subject: Re: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

Contact tracing solutions provide some promise toward sustainable COVID-19 containment:

https://github.com/BDI-pathogens/covid-19_instant_tracing/blob/master/Policy%20forum%20-%20COVID-19%20containment%20by%20herd%20protection.pdf

Could the US overcome the ethical and socially acceptable barriers to 60% adoption?

Personally, I'm concerned about the government working with big tech to drive such efforts given track records in (not?) balancing privacy with value capture (https://www.washingtonpost.com/technology/2020/03/17/white-house-location-data-coronavirus/).

Alternative… First thoughts towards a protocol/standard for privacy-respecting contact tracing apps:

1. Store encrypted personal location data locally on the device.

2. Only retain data for a rolling time horizon (~21 days = max(incubation) + 7)

3. Provide regular COVID-19/ILI self-assessment & self-reporting of clinical test request/administration/result

  a. There is potential here to integrate with Medical & Public Health provider data management activity (link to user_id / public key)

4. For identified high-risk users, send *minimal, anonymized, secure* location data to central server(s)

  a. Minimal: Only send location data from likely infectious period(s) (if timing is known for symptom onset or high-risk contact)

  b. Anonymized: Obscure location data for most common locations (i.e. home/work — index data on location boundaries)

  c. Secure: Location data is already encrypted, share decryption key with secure key management server(s)

5. Apps regularly query for high-risk movement overlapping with their own location movement boundaries

  a. If results exist, the app requests keys (audited), decrypts data, & compares detailed location and timing for high risk

  b. Update the user's infection risk rating(s) based on new geo-temporal contact interactions

...

Corollaries:

- Minimal sharing of anonymized high-value location data, encryption protected

- Individuals can audit others' requests of their infectious period location information

- User's shared data can be expired and/or deleted with kill-switch (i.e. removal of decryption key)

- Requests for communication with location contacts can be initiated (without providing prior identifying information)

- Near-real-time heat maps of high-risk areas can inform individual movement decisions & localized policy shifts

Hope this is useful food for thought. Or just a start towards discussing some standards for inter-op of solutions.

On March 19, 2020 at 08:36:39, Caneva, Duane (duane.caneva@hq.dhs.gov) wrote:

Please use this string going forward as of March 19, 2020, 10:35 EDT.

Duane C. Caneva, MD, MS

Chief Medical Officer

Department of Homeland Security

(o)

(c)

Duane.Caneva@hq.dhs.gov

DCaneva@dhs.ic.gov

Executive Assistant: Nichole Burton, nichole.burton2@associates.hq.dhs.gov,

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How much and when do we need hospital surge resources

FOUO

- Hospital resources alone cannot contain covid-19
- They must be used wisely along with early non-pharmaceutical interventions (NPI) including school closure, tele-work, social distancing and rapid screening and diagnostic tests for isolation
- Timing is critical, the longer the delay in NPI roll-out and testing, the larger the hospital resource need and the harder to cope with the exponential growth in patient needs.
- Delay marginalizes the value and effectiveness of surge resources

A city of 1% population: 3.3 Million

FOUO

Parameters	Description	Values
N	Total population	3,300,000
N_s	Total population enrolled in school	660,000
N_w	Total number of workers	1,485,000
R_0	Basic reproduction number	0.9 – 2.0
$1/\mu_e$	Mean exposed duration	2 days (25%), 5.2 days (55%), and 12.5 days (20%)
$1/\mu_p$	Mean pre-symptomatic duration	1 day
$1/\mu_I$	Mean symptomatic duration	3 days
$1/\mu_A$	Mean asymptomatic duration	3 days
p_s	Symptomatic probability	67%
p_d	Fatality rate if infected	2%
I_0	Initial number of infection	30 individual
	Disease start date	day 1
	Model duration	180 days
R_0	Basic reproduction number	start at 2.0, changes according to situation awareness and intervention
	School closure	Now, delay by 1 week, 2 weeks, 3 weeks, etc.
	Business tele-work, 50%	Now, delay by 1 week, 2 weeks, 3 weeks, etc
	only Business tele-work, 50%	
N_bed	number of beds	default 100, add 400, 1000, and so forth
p_sh	% of symptomatic patients being hospitalized	20%

No NPI Implemented, Just Hospital Surge

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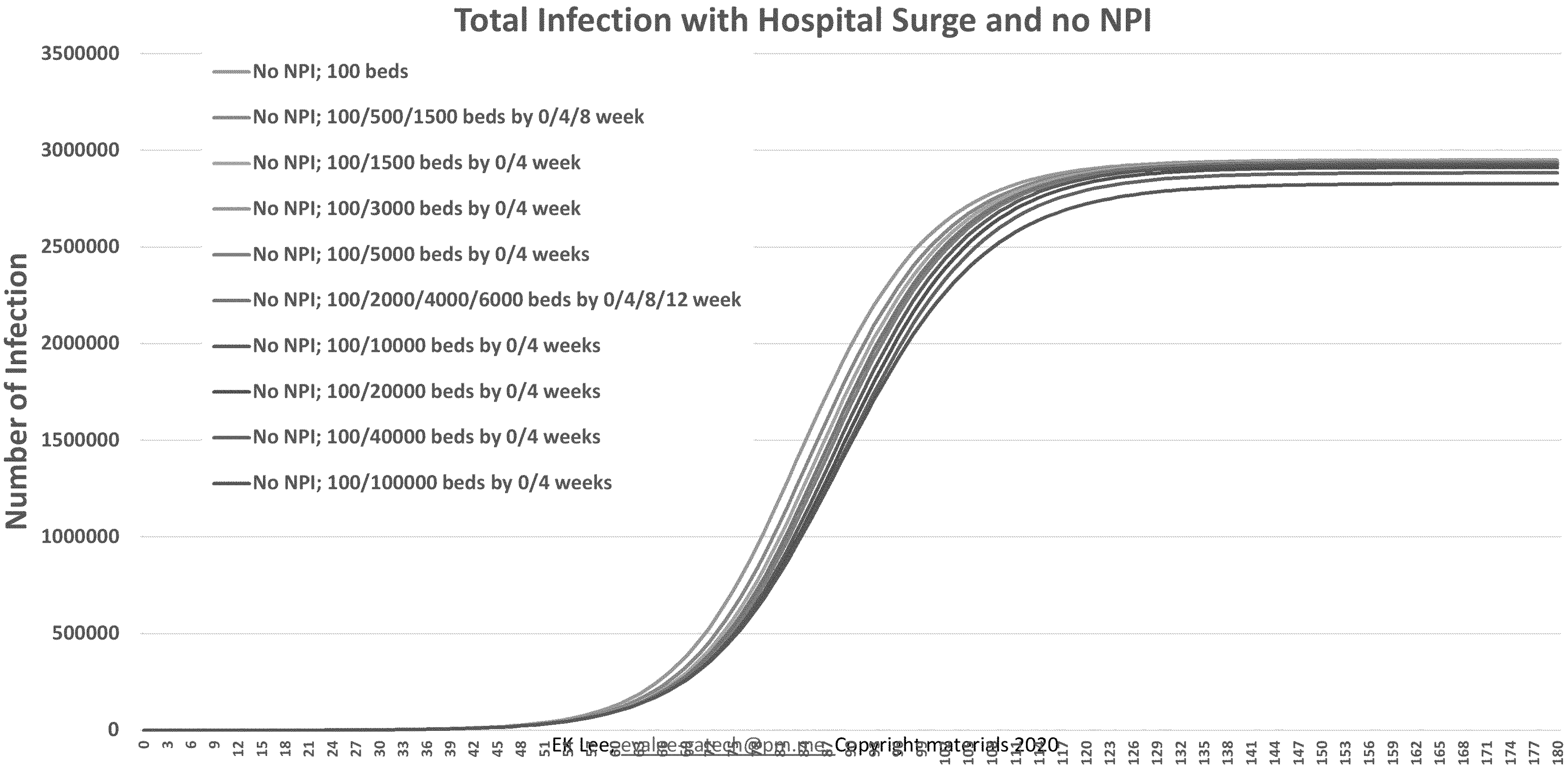

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Decrease in total infection vs bed surge

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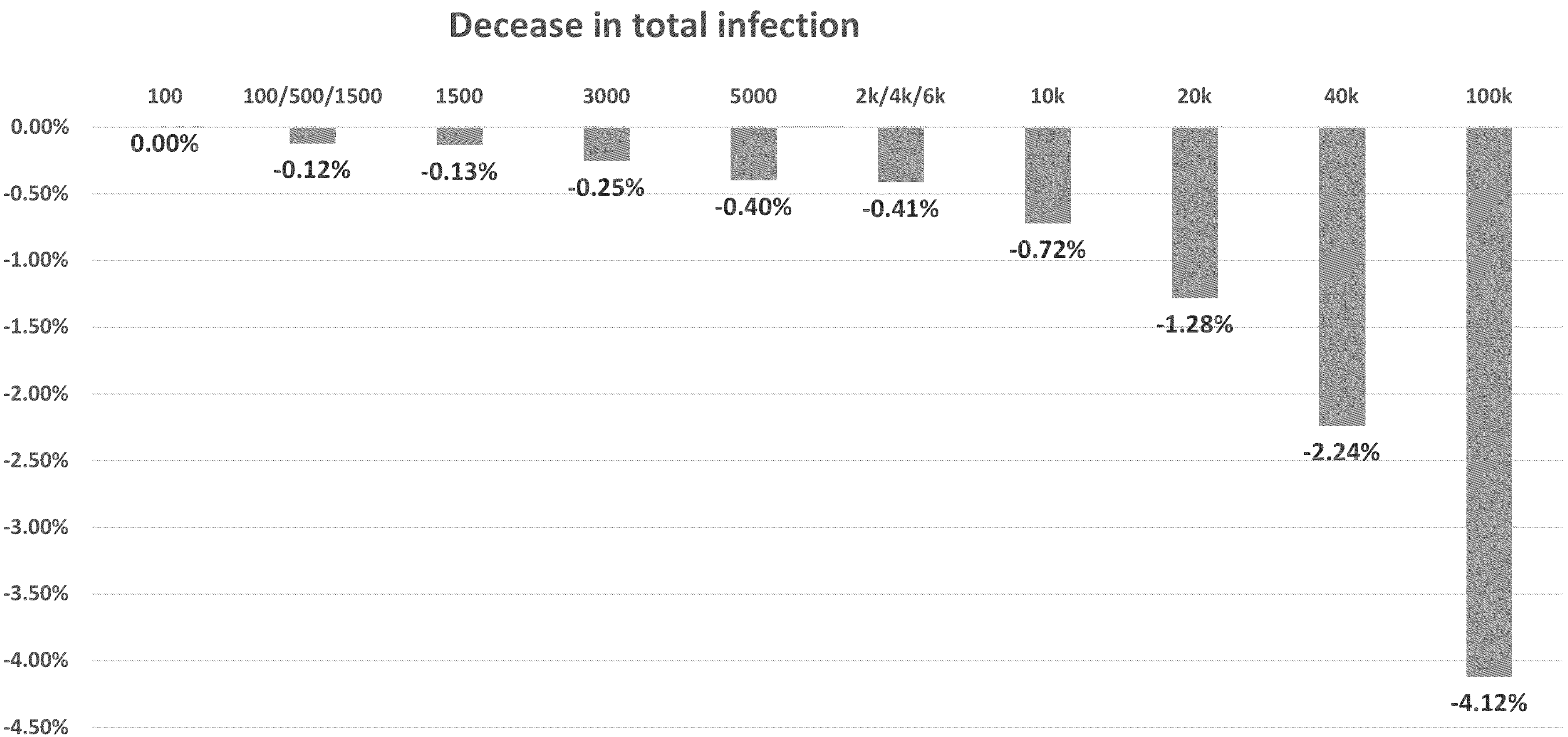

Total Mortality vs Hospital Surge

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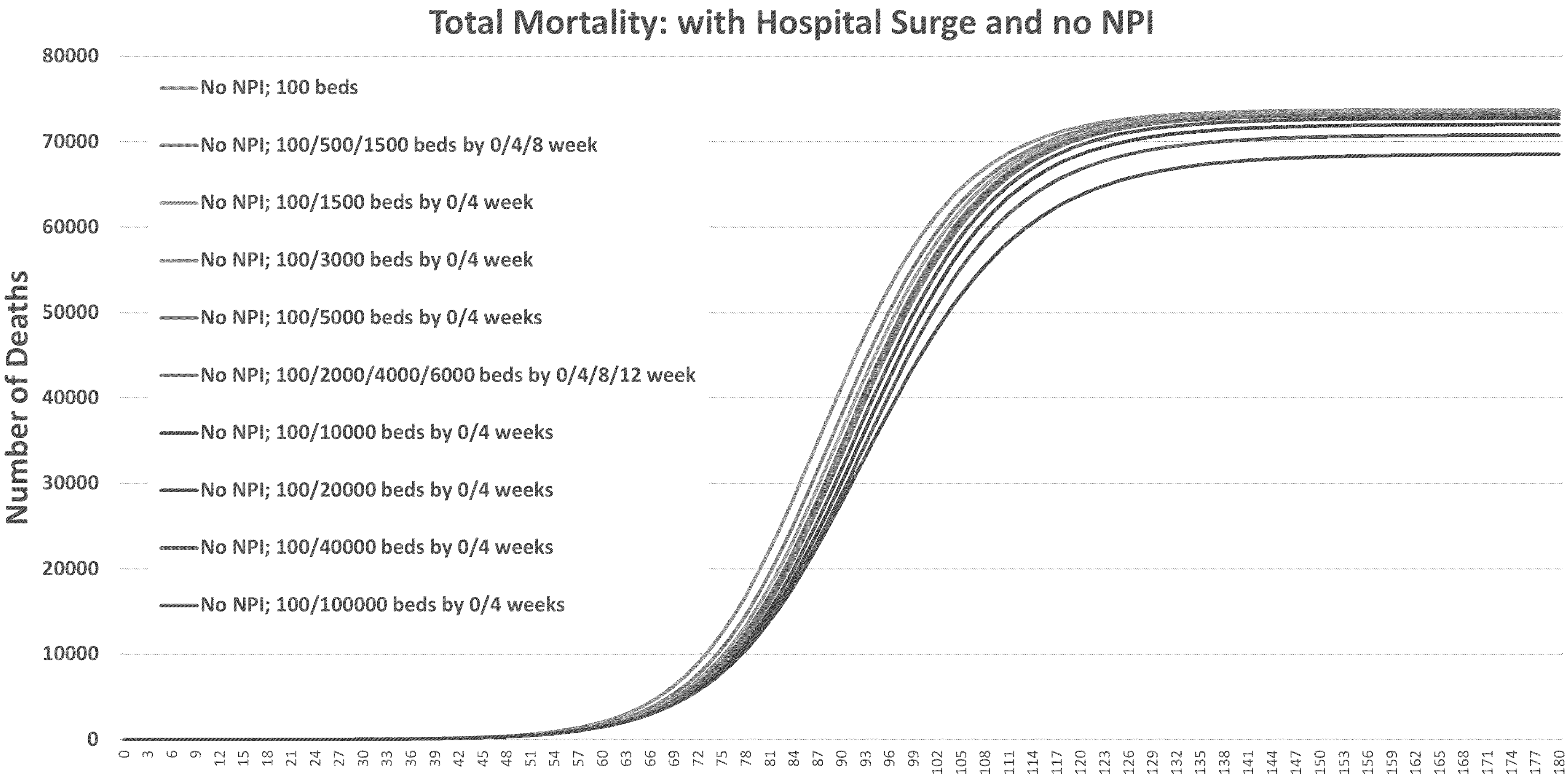

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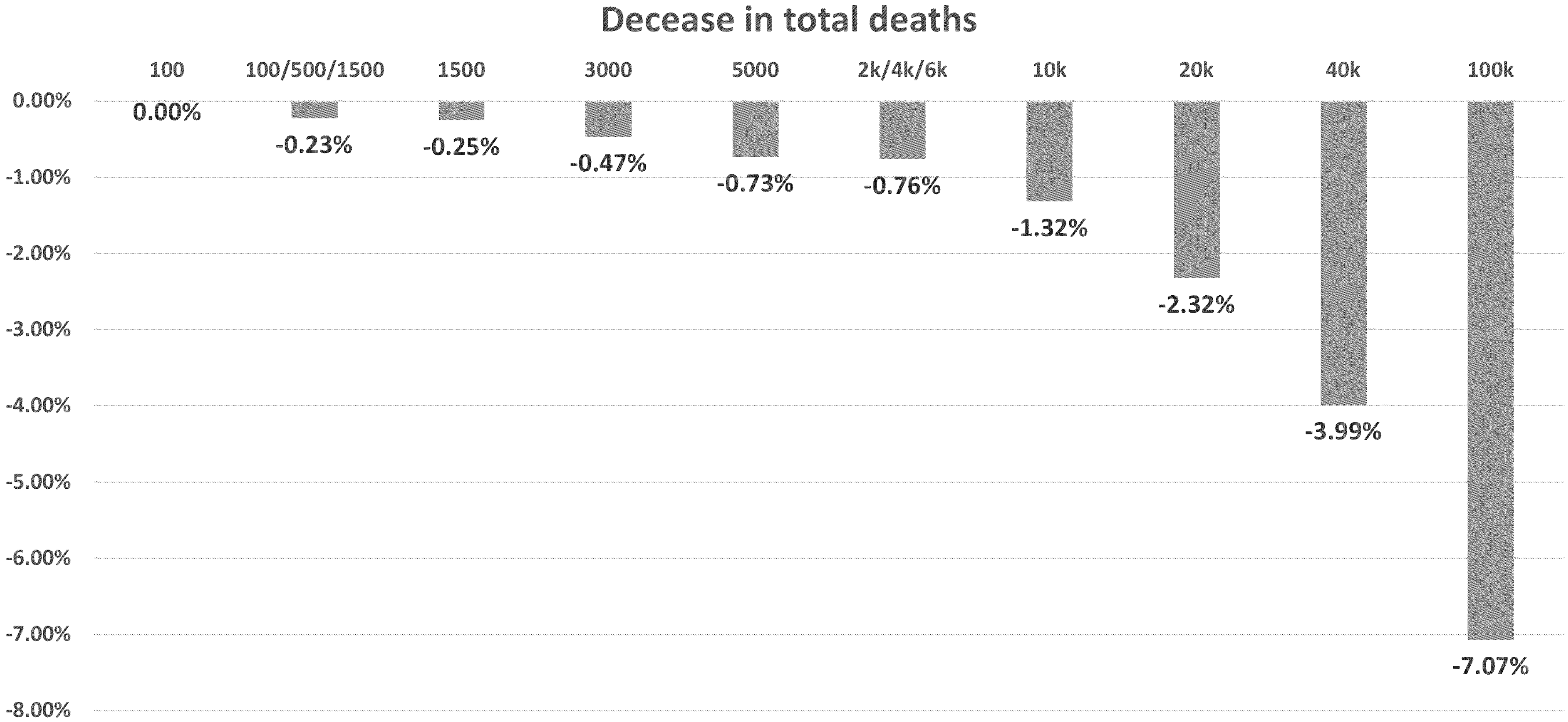
Decrease in total mortality vs bed surge

FOUO



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School closure and Hospital Surge

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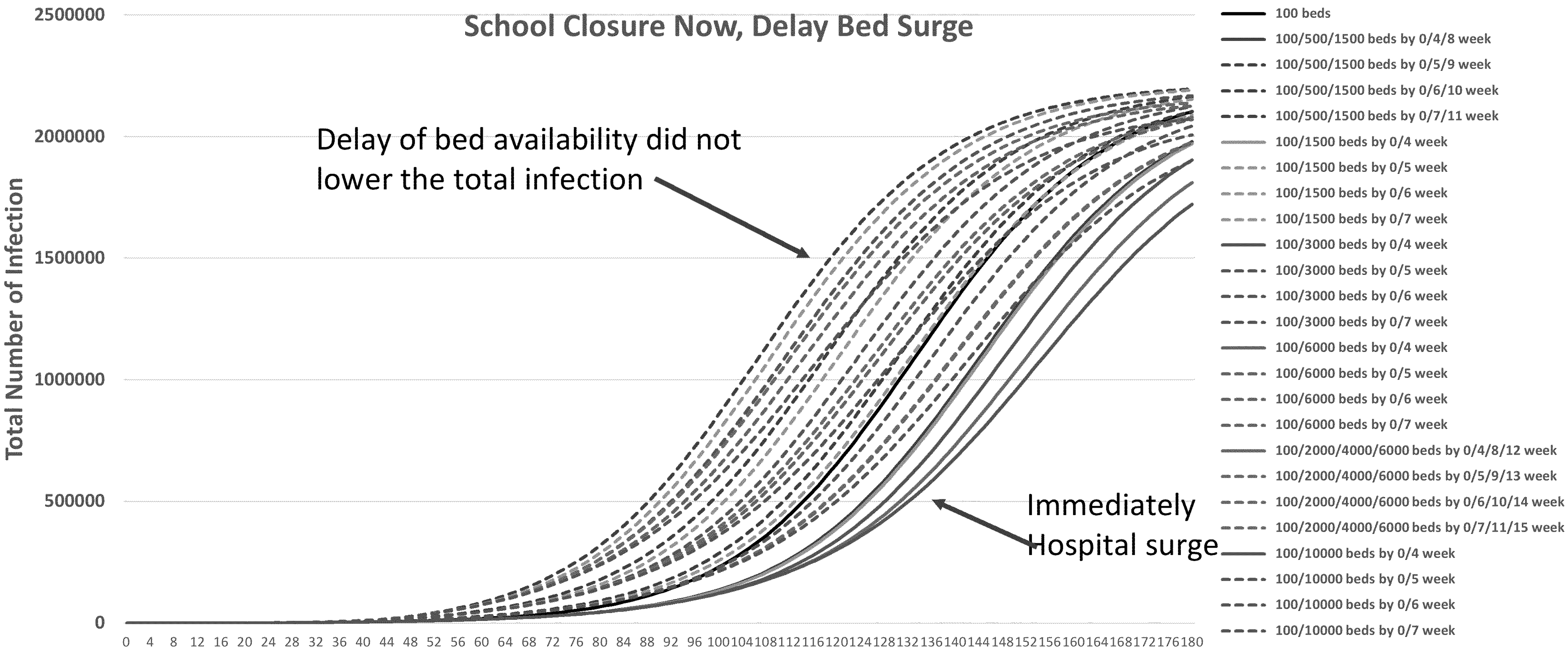

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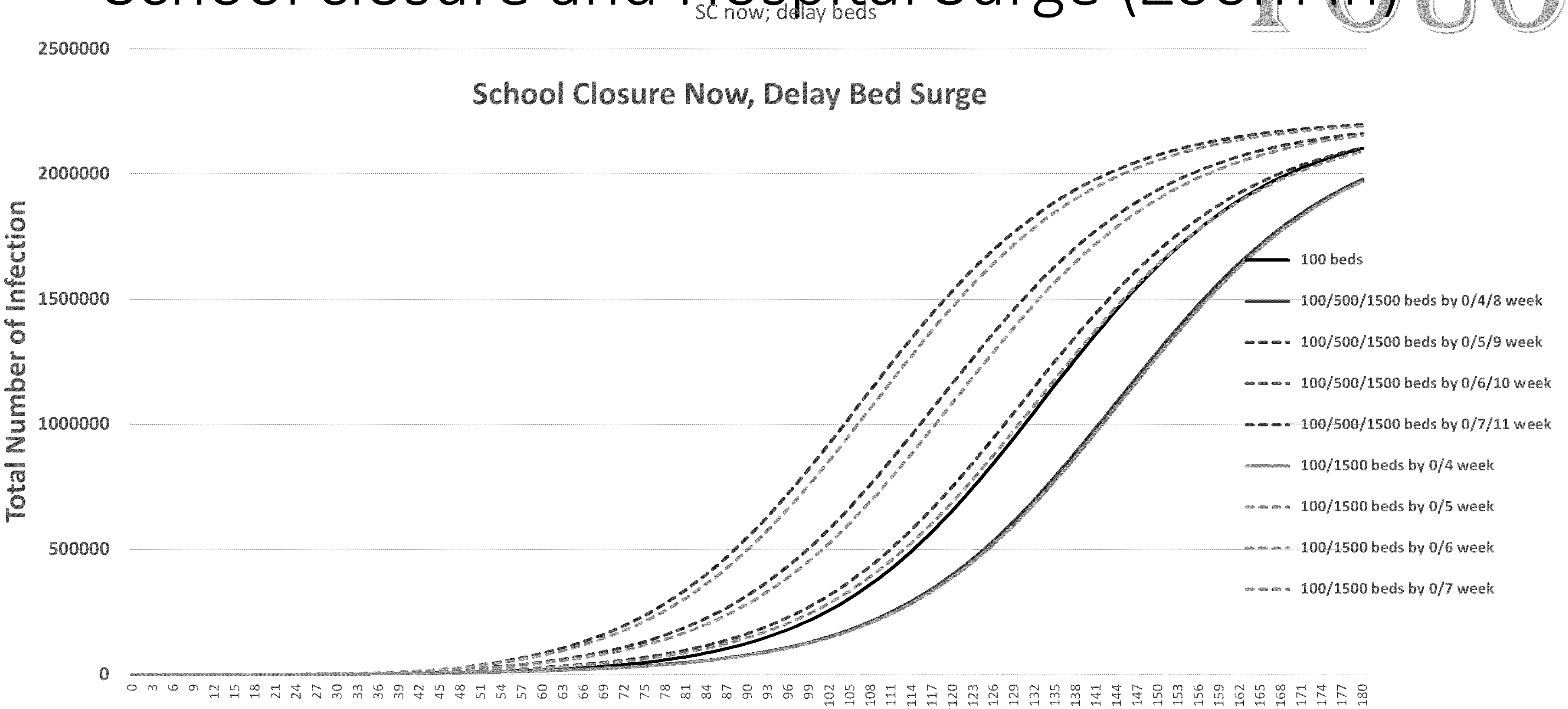
School closure and Hospital Surge (Zoom in)

FOUO



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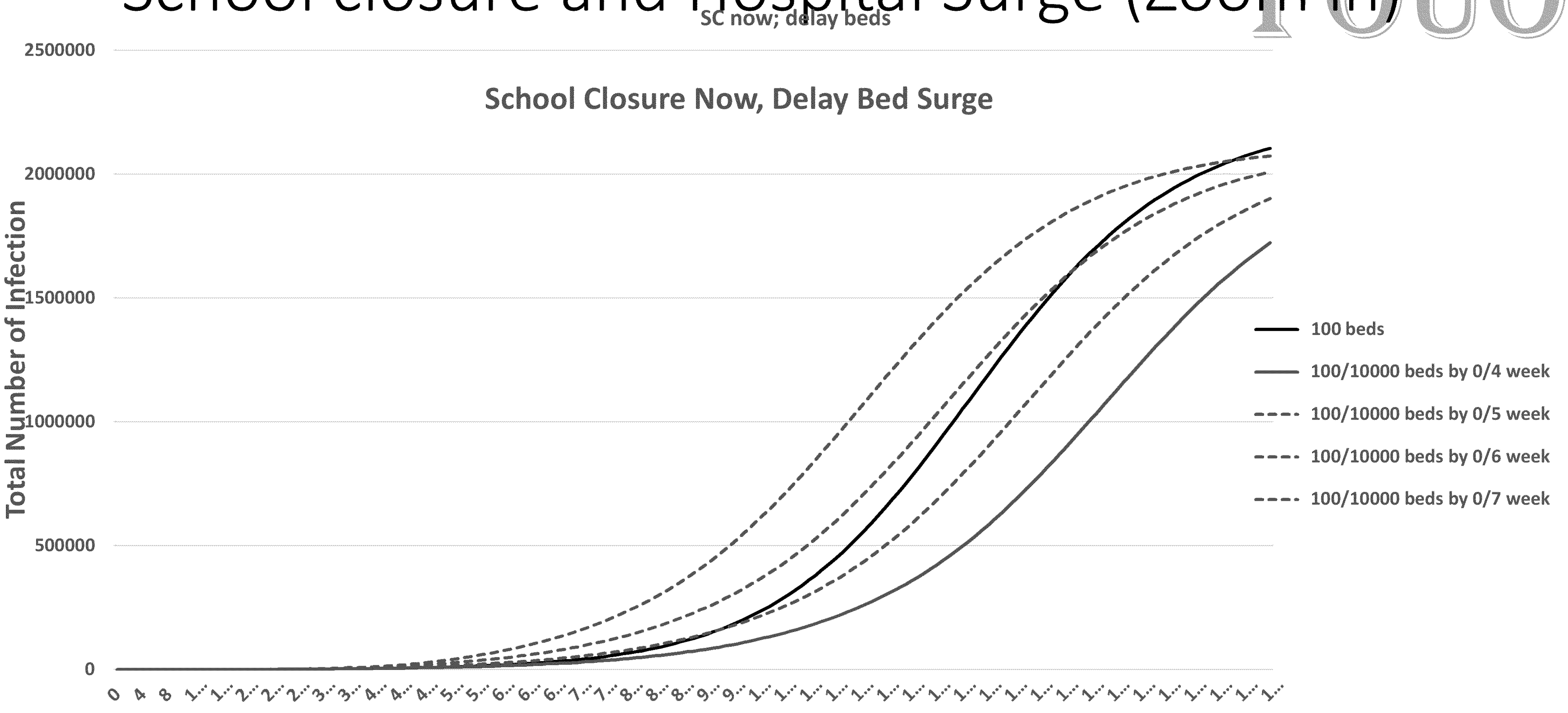
School closure and Hospital Surge (Zoom in)



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Timing of School closure vs Hospital Surge

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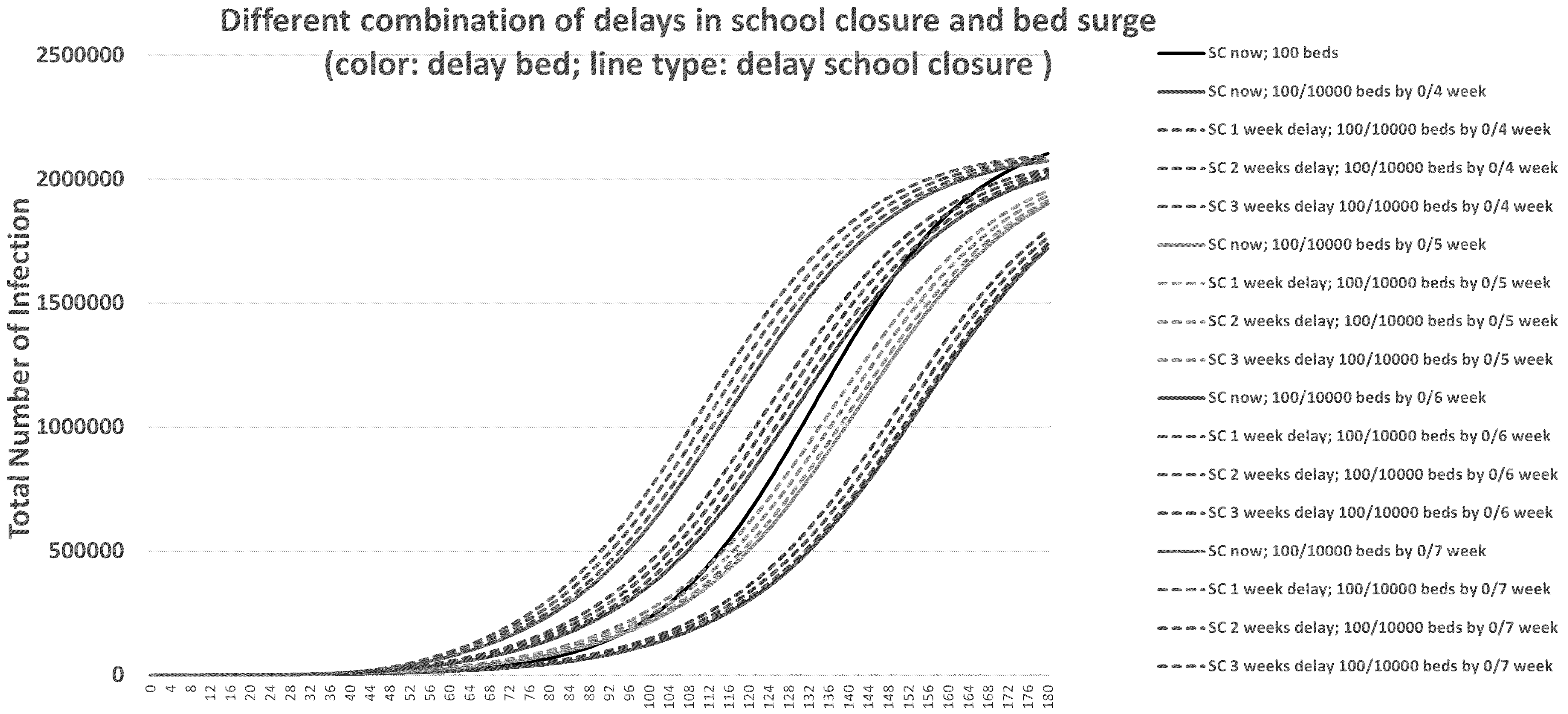

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Timing of School closure vs Hospital Surge

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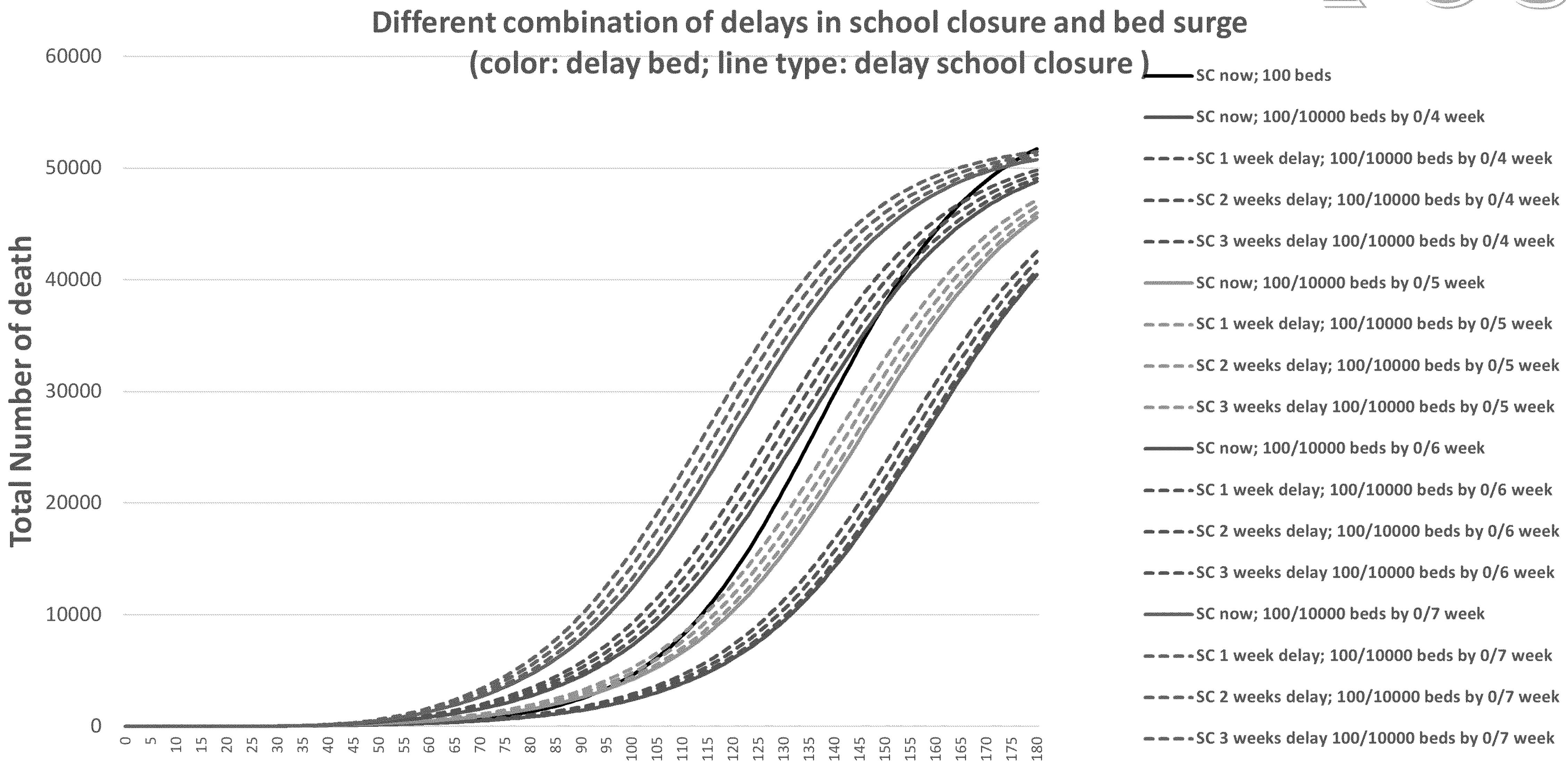

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School closure + 50% telework vs bed surge

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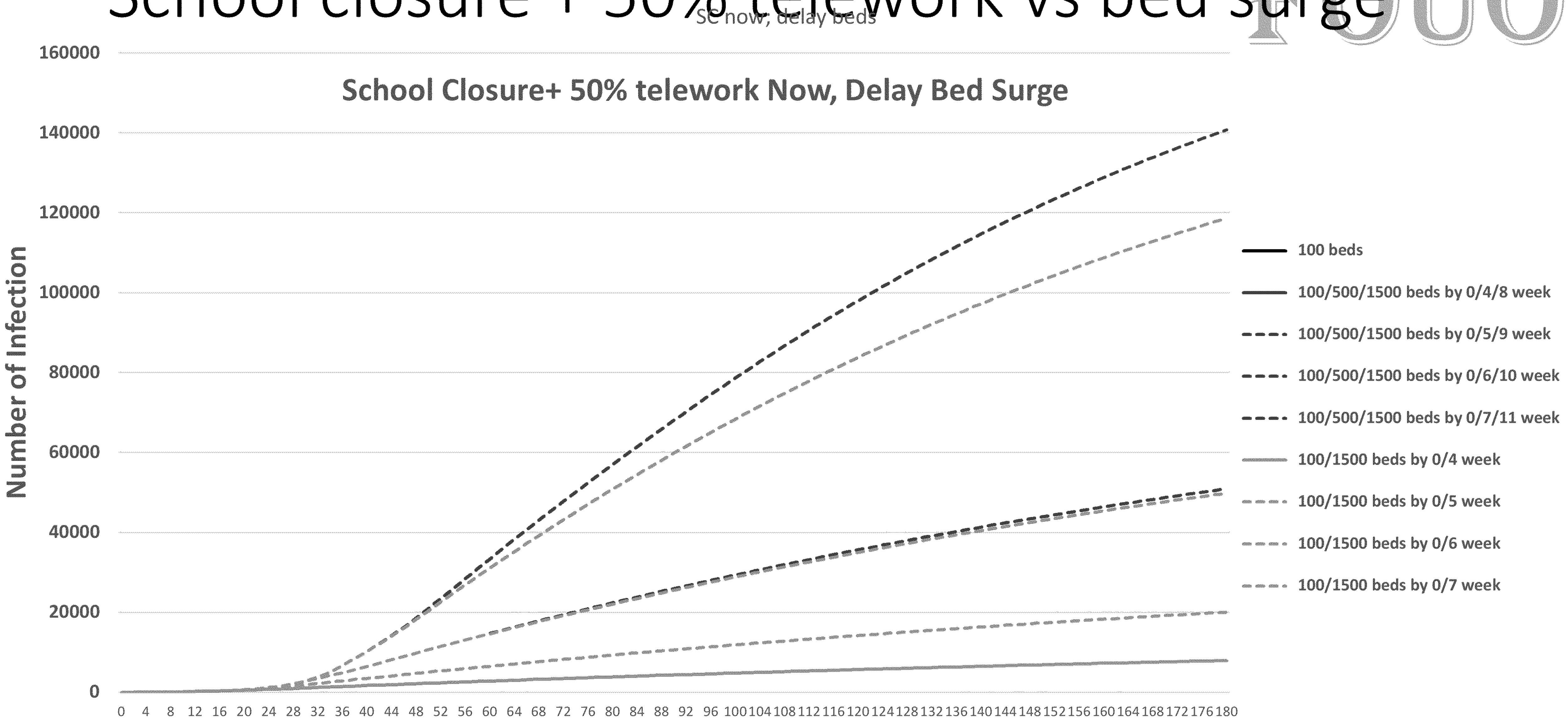

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School closure + 50% telework vs bed surge

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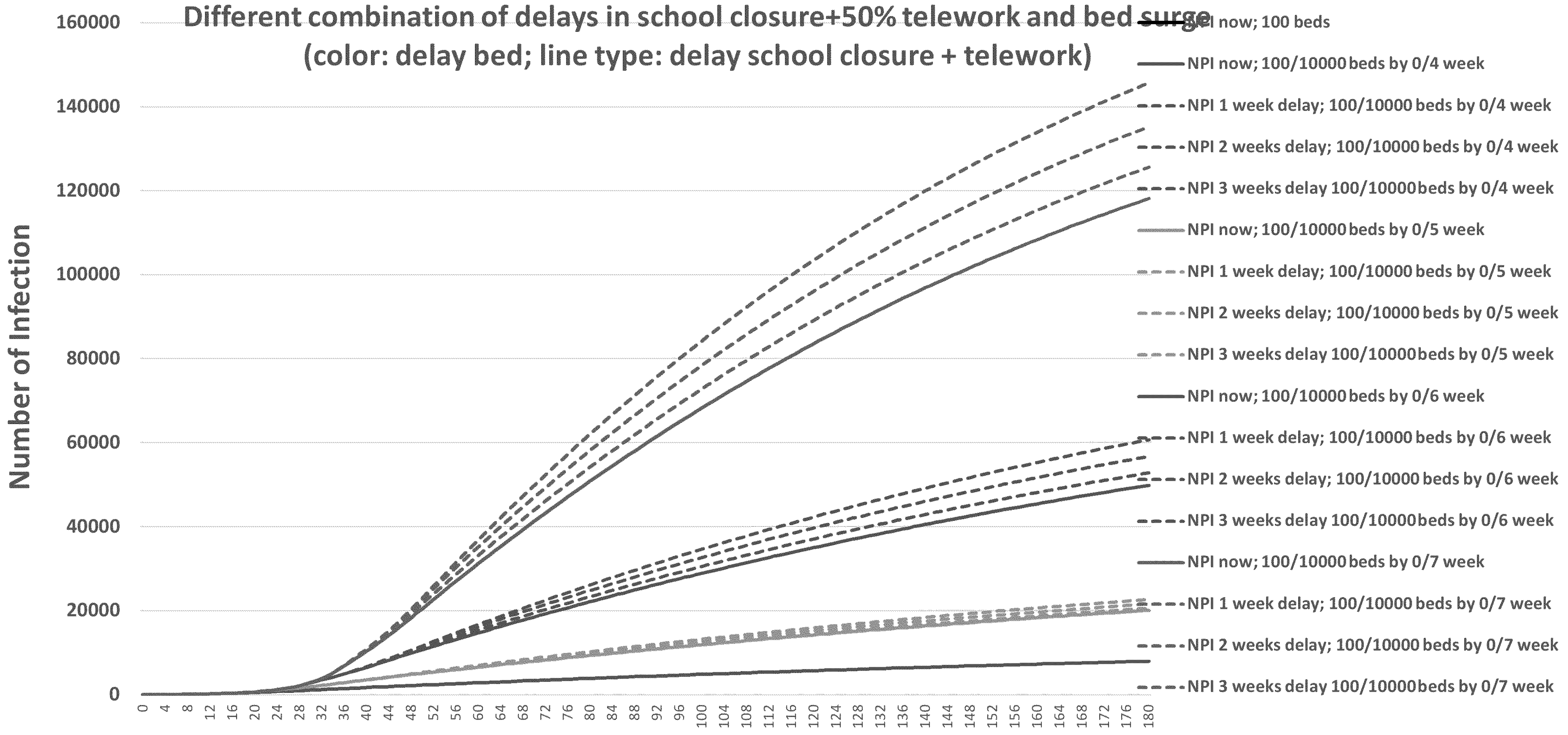

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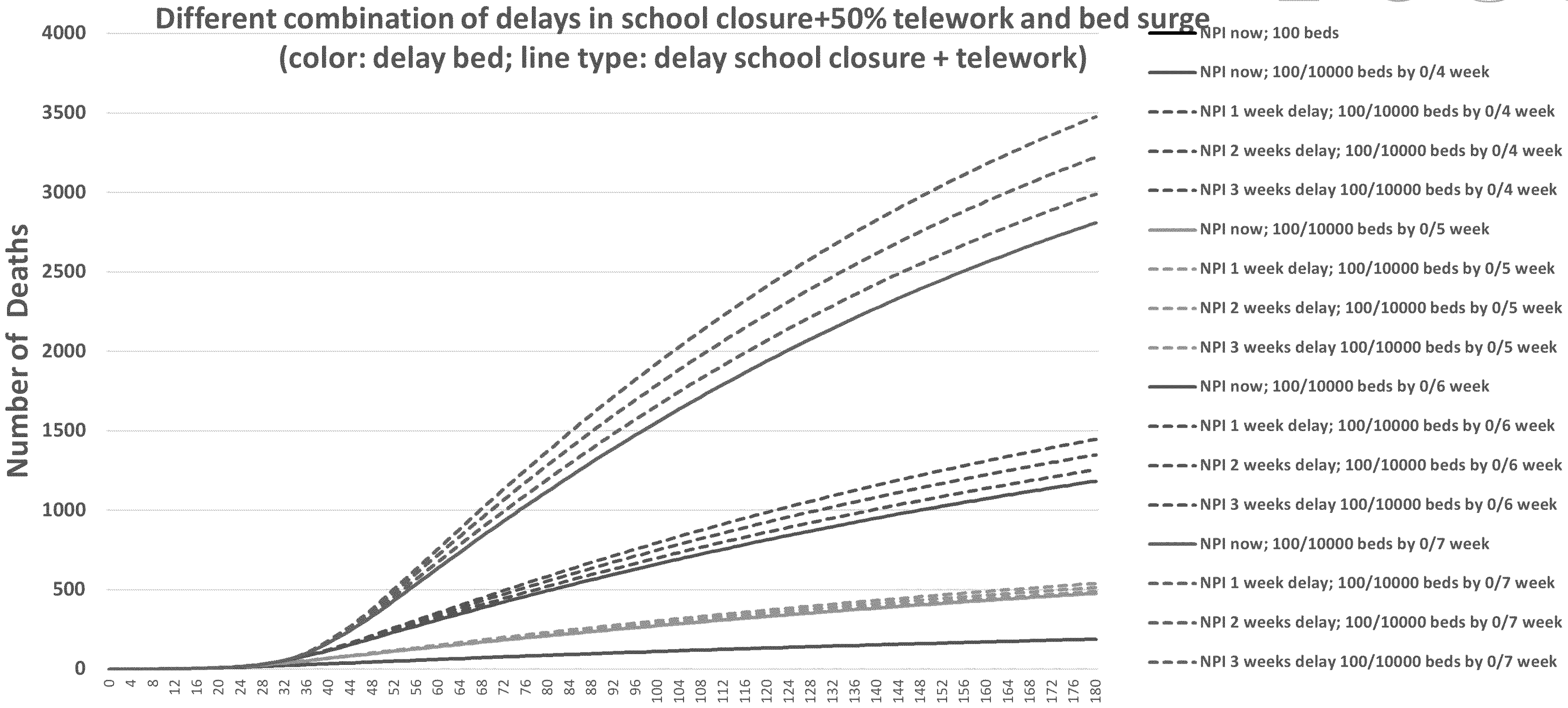
School closure + 50% telework vs bed surge

FOUO



EK Lee, evalee-gatech@pm.me, Copyright materials 2020

To: Mecher, Carter[Carter.Mecher@va.gov]
Cc: Caneva, Duane[duane.caneva@hq.dhs.gov]; Jamison Logan, Linda L[llogan@cvm.tamu.edu]; Dodgen, Daniel (OS/ASPR/SPPR)[daniel.dodgen@hhs.gov]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Eastman, Alexander[alexander.eastman@hq.dhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Walters, William (STATE.GOV)[walterswa2@state.gov]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; DeBord, Kristin (OS/ASPR/SPPR)[kristin.debord@hhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; Jerry Mothershead[jmothershead@patronusmedical.com]; Kevin Montgomery[kevin@collaborate.org]; Phillips, Sally (OS/ASPR/SPPR)[sally.phillips@hhs.gov]; DC[michelle.colby@usda.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Andy Desjardins, MD[adesjardins@patronusmedical.com]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Martin, Greg (state.gov)[martingj@state.gov]; Ryan Morhard[ryan.morhard@weforum.org]; Disbrow, Gary (OS/ASPR/BARDA)[gary.disbrow@hhs.gov]; Borio, Luciana[lborio@iqt.org]; Redd, John (OS/ASPR/SPPR)[john.redd@hhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; CHRISTOPHER Richard Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Baric, Ralph S[rbaric@email.unc.edu]; Schnitzer, Jay J.[jschnitzer@mitre.org]; jwleduc@utmb.edu[jwleduc@utmb.edu]; HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; Lisa Koonin[lkoonin1(Larry G[padgetlg@state.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; Lawler, James V[james.lawler@unmc.edu]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; David[dmarcozzi@som.umaryland.edu]; Hassell, David (Chris) (OS/ASPR/IO)[david.hassell@hhs.gov]; William Lang[wlang@worldclinic.com]; Hanfling, Dan[dhanfling@iqt.org]; Will Gaskins[will.gaskins@efiia.com]; Richard Hatchett[richard.hatchett@cepi.net]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[scott.lee@hhs.gov]; Lauren Johnston[ljohnston@patronusmedical.com]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Arthur L.. Kellerman MD, MPH, FACEP[arthur.kellermann@usuhs.edu]; Tom Johnson, Robert (OS/ASPR/BARDA)[robert.johnson@hhs.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Adams, Jerome (HHS/OASH)[jerome.adams@hhs.gov]; David Gruber (david.gruber@dshs.texas.gov)[david.gruber@dshs.texas.gov]; Wade, David[david.wade@hq.dhs.gov]; Lewis WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; CharitytA@CDPH[charity.dean@cdph.ca.gov]; Jim McLeod[jmcleod@patronusmedical.com]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]; Marinissen, Maria (HHS/OS/OGA)[Maria.Marinissen@hhs.gov]; Sutter, Mark[mark.sutter@hq.dhs.gov]; Mark Keim, MD MBA[mark@disasterdoc.org];

From: Dr. Eva
Sent: Thur 3/19/2020 3:26:44 PM (UTC-04:00)
Subject: Re: [EXTERNAL] RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

I spent hours this morning with clinicians on outpatient care. They do not have enough PPE nor face masks and so some are cancelling seeing patients to protect the workers and patients. So this is a very serious rippling effect. Yes, video-and tele-health is very critical to sustain the medical service to in-need patients.

Several doctors ask me if they should see patients today -- since their distance is only 12 inches during examination and they do not have N95 masks and some patients are high-risks. They can't provide N95 to patients either.

Yes, we consume a LOT of masks everyday. I

On Thu, Mar 19, 2020 at 1:59 PM Mecher, Carter <Carter.Mecher@va.gov> wrote:

> I heard the VP announce domestic production of 35M per month for one manufacturer. The other mentioned was a little less. 35M per month is about 1M per day. We have 5,000 hospitals in US so that equates to about 200 N95s per hospital per day. What is our daily burn rate? It helps but likely not nearly enough. Even if we double that—400 per day per hospital. Better, but not enough.
> One strategy to reduce PPE demand is to shift outpatient care to virtual care as quickly as we can. How could we turn ILINet around and use it as a means to broadcast to the ILINet providers and get them to move to virtual care—especially for all the ILI? The ILINet providers are seeing about 1.5M patients each week. On an average week in the US, there are 9.2M primary care/family practice visits. So ILINet providers account for about 14% of all the primary care/FP visits in the US. That is a good chunk to start with. Why can't CDC and the state and local PH depts reverse the flow of info back to them to urge them to move quickly to virtual care. We can monitor their effectiveness thru ILINet (monitor for a dramatic drop off in total visits and ILI visits). I'm assuming they are not counting ILI telephone visits in the ILI totals.
>
> Sent with BlackBerry Work

(www.blackberry.com)

From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Date: Thursday, Mar 19, 2020, 12:53 PM
To: Jamison Day Logan, Linda L <llogan@cvm.tamu.edu>, Dodgen, Daniel (OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>, Venkayya, Rajeev <rajeev.venkayya@takeda.com>, Ronny Jackson <ronny.jacksonmd@g Eastman, Alexander <alexander.eastman@hq.dhs.gov>, Mansoura, Monique K. <mmansoura@mitre.org>, LLogandakar <llogandakar@gmail.com>, Walters, William (STATE.GOV) <walterswa2@state.gov>, Parker Jr, Gerald W <gparker@cvm.tamu.edu>, DeBord, Kristin (OS/ASPR/SPPR) <kristin.debord@hhs.gov>, EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>, Jerry Mothershead <jmothershead@patronusmedical.com>, Kevin Montgomery <kevin@collaborate.org>, Phillips, Sally (OS/ASPR/SPPR) <sally.phillips@hhs.gov>, DC <michelle.colby@usda.gov>, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>, Andy Desjardins, MD <adesjardins@patronusmedical.com>, Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>, Yeskey, Kevin <kevin.yeskey@hhs.gov>, danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>, Martin, Greg (state.gov) <martingj@state.gov>, Ryan Morhard <ryan.morhard@weforum.org>, Disbrow, Gary (OS/ASPR/BARDA) <gary.disbrow@hhs.gov>, Borio, Luciana <lborio@iqt.org>, Redd, John (OS/ASPR/SPPR) <john.redd@hhs.gov>, Dr. Eva Lee Mecher, Carter <Carter.Mecher@va.gov>, KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>, eric.mcdonald@sdcounty.ca.gov <eric.mcdonald@sdcounty.ca.gov>, CHRISTOPHER ALLEN <chrisallen_10@msn.com>, Richard Tubb <bg.richard.tubb@gmail.com>, Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>, Baric, Ralph S <rbaric@email.unc.edu>, Schnitzer, Jay J. <jschnitzer@mitre.org>, jwleduc@utmb.edu <jwleduc@utmb.edu>, HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>, Lisa Koonin <lkoonin1@gmail.com>, Larry G <padgetlg@state.gov>, 1974usna@gmail.com <1974usna@gmail.com>, mvcallahan@mgh.harvard.edu <mvcallahan@mgh.harvard.edu>, Lawler, James V <james.lawler@unmc.edu>, Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>, David <dmarcozzi@som.umaryland.edu>, Hassell, David (Chris) (OS/ASPR/IO) <david.hassell@hhs.gov>, William Lang <wlang@worldclinic.com>, Hanfling, Dan <dhanfling@iqt.org>, Will Gaskins <will.gaskins@efiia.com>, Richard Hatchett <richard.hatchett@cepi.net>, TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>, Lee, Scott (OS/ASPR/EMMO) <scott.lee@hhs.gov>, Lauren Johnston <ljohnston@patronusmedical.com>, Steven Jt(tCHFStDPH) <steven.stack@ky.gov>, Arthur L.. Kellerman MD, MPH, FACEP <arthur.kellermann@usuhs.edu>, Tom Bossert Johnson, Robert (OS/ASPR/BARDA) <robert.johnson@hhs.gov>, HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>, Adams, Jerome (HHS/OASH) <jerome.adams@hhs.gov>, David Gruber (david.gruber@dshs.texas.gov) <david.gruber@dshs.texas.gov>, Wade, David <david.wade@hq.dhs.gov>, Lewis Hofmann WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>, WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>, CharitytA@CDPH <charity.dean@cdph.ca.gov>, Jim McLeod <jmcleod@patronusmedical.com>, Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>, Marinissen, Maria (HHS/OS/OGA) <Maria.Marinissen@hhs.gov>, Sutter, Mark <mark.sutter@hq.dhs.gov>, Mark Keim, MD MBA <mark@disasterdoc.org>
Subject: [EXTERNAL] RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

The President announced today that legislation passed last night removes liability to the makers of N95 masks for an industrial setting to be used in a healthcare setting. This comparison by 3M comparing a surgical N95 to an industrial N95 is very helpful. Shows why this could make available millions of more masks.

https://multimedia.3m.com/mws/media/1794572O/surgical-n95-vs-standard-n95-which-to-consider.pdf

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From: Jamison Day
Sent: Subject: Re: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

Contact tracing solutions provide some promise toward sustainable COVID-19 containment:

https://github.com/BDI-pathogens/covid-19_instant_tracing/blob/master/Policy%20forum%20-%20COVID-19%20containment%20by%20herd%20protection.pdf

Could the US overcome the ethical and socially acceptable barriers to 60% adoption?

Personally, I'm concerned about the government working with big tech to drive such efforts given track records in (not?) balancing privacy with value capture (https://www.washingtonpost.com/technology/2020/03/17/white-house-location-data-coronavirus/).

Alternative… First thoughts towards a protocol/standard for privacy-respecting contact tracing apps:

1. Store encrypted personal location data locally on the device.

2. Only retain data for a rolling time horizon (~21 days = max(incubation) + 7)

3. Provide regular COVID-19/ILI self-assessment & self-reporting of clinical test request/administration/result

  a. There is potential here to integrate with Medical & Public Health provider data management activity (link to user_id / public key)

4. For identified high-risk users, send *minimal, anonymized, secure* location data to central server(s)

  a. Minimal: Only send location data from likely infectious period(s) (if timing is known for symptom onset or high-risk contact)

  b. Anonymized: Obscure location data for most common locations (i.e. home/work — index data on location boundaries)

  c. Secure: Location data is already encrypted, share decryption key with secure key management server(s)

5. Apps regularly query for high-risk movement overlapping with their own location movement boundaries

  a. If results exist, the app requests keys (audited), decrypts data, & compares detailed location and timing for high risk

  b. Update the user's infection risk rating(s) based on new geo-temporal contact interactions

...

Corollaries:

- Minimal sharing of anonymized high-value location data, encryption protected

- Individuals can audit others' requests of their infectious period location information

- User's shared data can be expired and/or deleted with kill-switch (i.e. removal of decryption key)

- Requests for communication with location contacts can be initiated (without providing prior identifying information)

- Near-real-time heat maps of high-risk areas can inform individual movement decisions & localized policy shifts

Hope this is useful food for thought. Or just a start towards discussing some standards for inter-op of solutions.

On March 19, 2020 at 08:36:39, Caneva, Duane (duane.caneva@hq.dhs.gov) wrote:

> Please use this string going forward as of March 19, 2020, 10:35 EDT.
>
> Duane C. Caneva, MD, MS
>
> Chief Medical Officer

Department of Homeland Security

(o)

(c)

Duane.Caneva@hq.dhs.gov

DCaneva@dhs.ic.gov

Executive Assistant: Nichole Burton, nichole.burton2@associates.hq.dhs.gov,

The information in this e-mail may be privileged and confidential, intended only for the use of the addressee(s) above. Any unauthorized use or disclosure of this information is prohibited. If you have received this e-mail by mistake, please delete it and immediately contact the sender.

To: Dr. Eva Dr. Eva K
Cc: Mecher, Carter[Carter.Mecher@va.gov]; Caneva, Duane[duane.caneva@hq.dhs.gov]; Jamison Logan, Linda L[llogan@cvm.tamu.edu]; Dodgen, Daniel (OS/ASPR/SPPR)[daniel.dodgen@hhs.gov]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Eastman, Alexander[alexander.eastman@hq.dhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Walters, William (STATE.GOV)[walterswa2@state.gov]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; DeBord, Kristin (OS/ASPR/SPPR)[kristin.debord@hhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; Jerry Mothershead[jmothershead@patronusmedical.com]; Kevin Montgomery[kevin@collaborate.org]; Phillips, Sally (OS/ASPR/SPPR)[sally.phillips@hhs.gov]; DC[michelle.colby@usda.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Andy Desjardins, MD[adesjardins@patronusmedical.com]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Martin, Greg (state.gov)[martingj@state.gov]; Ryan Morhard[ryan.morhard@weforum.org]; Disbrow, Gary (OS/ASPR/BARDA)[gary.disbrow@hhs.gov]; Borio, Luciana[lborio@iqt.org]; Redd, John (OS/ASPR/SPPR)[john.redd@hhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; CHRISTOPHER Richard Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Baric, Ralph S[rbaric@email.unc.edu]; Schnitzer, Jay J.[jschnitzer@mitre.org]; jwleduc@utmb.edu[jwleduc@utmb.edu]; HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; Lisa Koonin[lkoonin1(Larry G[padgetlg@state.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; Lawler, James V[james.lawler@unmc.edu]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; David[dmarcozzi@som.umaryland.edu]; Hassell, David (Chris) (OS/ASPR/IO)[david.hassell@hhs.gov]; William Lang[wlang@worldclinic.com]; Hanfling, Dan[dhanfling@iqt.org]; Will Gaskins[will.gaskins@efiia.com]; Richard Hatchett[richard.hatchett@cepi.net]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[scott.lee@hhs.gov]; Lauren Johnston[ljohnston@patronusmedical.com]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Arthur L.. Kellerman MD, MPH, FACEP[arthur.kellermann@usuhs.edu]; Tom Johnson, Robert (OS/ASPR/BARDA)[robert.johnson@hhs.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Adams, Jerome (HHS/OASH)[jerome.adams@hhs.gov]; David Gruber (david.gruber@dshs.texas.gov)[david.gruber@dshs.texas.gov]; Wade, David[david.wade@hq.dhs.gov]; Lewis WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; CharitytA@CDPH[charity.dean@cdph.ca.gov]; Jim McLeod[jmcleod@patronusmedical.com]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]; Marinissen, Maria (HHS/OS/OGA)[Maria.Marinissen@hhs.gov]; Sutter, Mark[mark.sutter@hq.dhs.gov]; Mark Keim, MD MBA[mark@disasterdoc.org]
From: Carter
Sent: Thur 3/19/2020 4:08:09 PM (UTC-04:00)
Subject: RE: [EXTERNAL] RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

Countries we are watching. Spain continues to trail Italy by about 8 days. UK is starting to accelerate (almost caught up to US in deaths). The UK has about 1/5th the population of the US. US data incomplete. France data delayed.

Date of 1st Case	24-Jan		1-Feb		30-Jan		24-Jan	
Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	

27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	1
1-Mar	130	2	84		1,694	34	73	1
2-Mar	191	3	120		2,036	52	99	6
3-Mar	212	4	151		2,502	79	103	6
4-Mar	285	4	202		3,089	107	154	11
5-Mar	423	7	248	1	3,858	148	197	12
6-Mar	613	9	517	10	4,636	197	309	15
7-Mar	949	16	613	17	5,833	233	434	19
8-Mar	1,126	19	848	25	7,375	366	544	22
9-Mar	1,412	30	1,231	30	9,172	463	728	27
10-Mar	1,784	33	1,646	35	10,149	631	1,010	31
11-Mar	2,281	49	2,277	55	12,462	827	1,311	38
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	40
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	48
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	58
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	69
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661	87
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423	108
18-Mar	9,134	244	13,716	533	35,713	2,978	9,368	154
19-Mar			17,395	803	41,035	3,405	*11,597*	*171*

Sent from Mail for Windows 10

From: Dr. Eva Lee
Sent: Thursday, March 19, 2020 3:51 PM
To: Carter Mecher; Dr. Eva K Lee
Cc: Mecher, Carter; Caneva, Duane; Jamison Day; Logan, Linda L; Dodgen, Daniel (OS/ASPR/SPPR); Venkayya, Rajeev; Ronny Jackson; Eastman, Alexander; Mansoura, Monique K.; LLogandakar; Walters, William (STATE.GOV); Parker Jr, Gerald W; DeBord, Kristin (OS/ASPR/SPPR); EVANS, MARIEFRED; Jerry Mothershead; Kevin Montgomery; Phillips, Sally (OS/ASPR/SPPR); DC; Matthew

J CIV USARMY (USA); Andy Desjardins, MD; Fantinato, Jessica (USDA.GOV); Yeskey, Kevin; danny.shiau@usuhs.edu; Martin, Greg (state.gov); Ryan Morhard; Disbrow, Gary (OS/ASPR/BARDA); Borio, Luciana; Redd, John (OS/ASPR/SPPR); KAUSHIK, SANGEETA; eric.mcdonald@sdcounty.ca.gov; CHRISTOPHER ALLEN; Richard Tubb; Cordts, Jerome (CTR); Baric, Ralph S; Schnitzer, Jay J.; jwleduc@utmb.edu; HARVEY, MELISSA; Lisa Koonin; Larry G; 1974usna@gmail.com; mvcallahan@mgh.harvard.edu; Lawler, James V; Ignacio, Joselito; David; Hassell, David (Chris) (OS/ASPR/IO); William Lang; Hanfling, Dan; Will Gaskins; Richard Hatchett; TARANTINO, DAVID A; Lee, Scott (OS/ASPR/EMMO); Lauren Johnston; Steven Jt(tCHFStDPH); Arthur L.. Kellerman MD, MPH, FACEP; Tom Bossert; Johnson, Robert (OS/ASPR/BARDA); HAMILTON, CAMERON; Adams, Jerome (HHS/OASH); David Gruber (david.gruber@dshs.texas.gov); Wade, David; Lewis Hofmann; WILKINSON, THOMAS; WOLFE, HERBERT; CharitytA@CDPH; Jim McLeod; Taylor, Justin (CTR); Marinissen, Maria (HHS/OS/OGA); Sutter, Mark; Mark Keim, MD MBA
Subject: Re: [EXTERNAL] RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

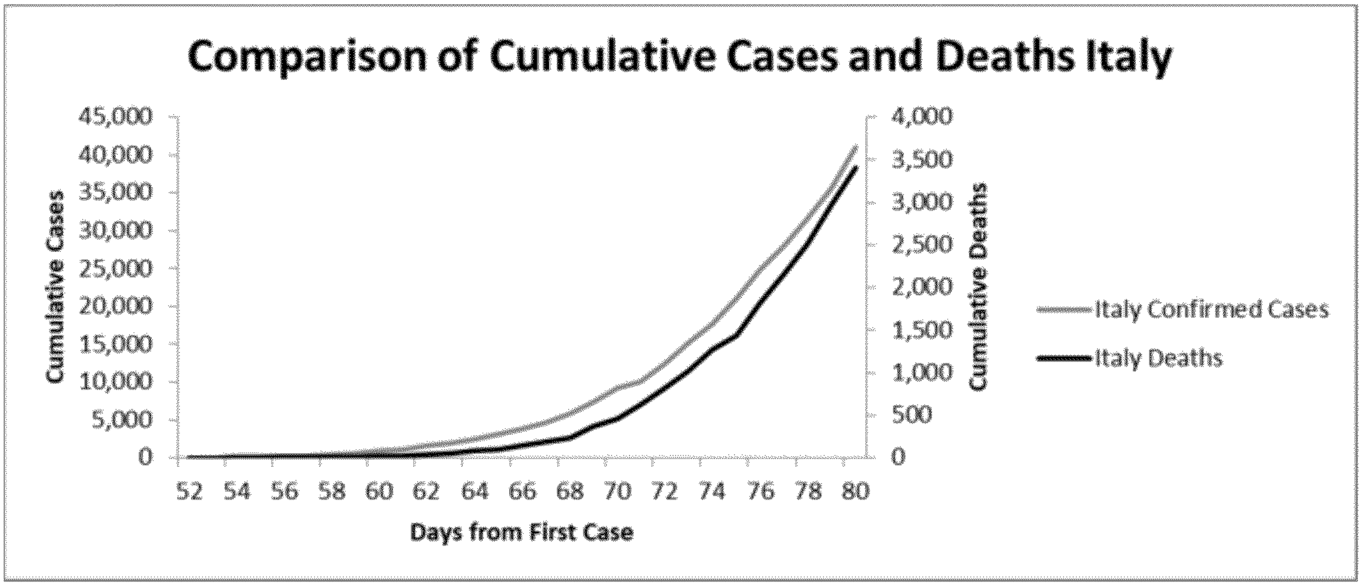
Italy need a complete isolation - with noone allow to be out, and a huge pump of hospital resources. They need medical personnel, hospital beds and PPE. I believe they need outside help to get through these. They have too many sick patients in the hospitals, too few medical personnel. Too late NPI and not unified messages of complete isolation of household. They really need extra help from outside to get through this, This is the last resort. Who has the resources? They need a lot!

For US (or anywhere): For quarantine of travelers returning etc, I think hotels or anything empty will be good, they must be reinforced to ensure disinfected environment. For medical care, we need sterilization of the entire building and everything. I do not know how that can be accomplished. Recall, hospital acquired infection can be dangerous, so medical tents (or Navy medical ships) are all good. The extra beds cannot be delayed in order for it to improve the fast-changing situation.

On a security issue, NYP was tracking all the covid-19 patients, and then they have too many and can't track all. Now just sampling.

On Thu, Mar 19, 2020 at 3:34 PM Carter Mecher wrote:

Italy continues to accelerate with deaths in Italy passing the total deaths reported for all of China. It has now been 4 weeks since the first death was reported in Italy (so 4 weeks from first death on Feb 21 to 3,405 deaths on March 19). First death was on Day 53 of the graph below.



Italy (60M)			
Date	Cum Confirmed Cases	Cum Deaths	#Serious Condition (ICU)
30-Jan	2	0	
31-Jan	2	0	
7-Feb	3	0	

20-Feb	3	0	2
21-Feb	20	1	6
22-Feb	63	2	7
23-Feb	155	3	26
24-Feb	229	7	23
25-Feb	322	11	19
26-Feb	453	12	
27-Feb	655	17	
28-Feb	889	21	64
29-Feb	1,128	29	105
1-Mar	1,694	34	140
2-Mar	2,036	52	166
3-Mar	2,502	79	
4-Mar	3,089	107	295
5-Mar	3,858	148	351
6-Mar	4,636	197	462
7-Mar	5,833	233	567
8-Mar	7,375	366	650
9-Mar	9,172	463	733
10-Mar	10,149	631	877
11-Mar	12,264	831	1,028
12-Mar	15,113	1,016	1,153
13-Mar	17,660	1,266	1,328
14-Mar	21,157	1,441	1,518
15-Mar	24,747	1,809	1,672
16-Mar	27,980	2,158	1,851
17-Mar	31,506	2,503	2,060

18-Mar	35,713	2,978	2,257
19-Mar	41,035	3,405	2,498

Sent from Mail for Windows 10

From: Carter Mecher
Sent: Thursday, March 19, 2020 3:17 PM
To: Mecher, Carter; Caneva, Duane; Jamison Day; Logan, Linda L; Dodgen, Daniel (OS/ASPR/SPPR); Venkayya, Rajeev; Ronny Jackson; Eastman, Alexander; Mansoura, Monique K.; LLogandakar; Walters, William (STATE.GOV); Parker Jr, Gerald W; DeBord, Kristin (OS/ASPR/SPPR); EVANS, MARIEFRED; Jerry Mothershead; Kevin Montgomery; Phillips, Sally (OS/ASPR/SPPR); DC; Matthew J CIV USARMY (USA); Andy Desjardins, MD; Fantinato, Jessica (USDA.GOV); Yeskey, Kevin; danny.shiau@usuhs.edu; Martin, Greg (state.gov); Ryan Morhard; Disbrow, Gary (OS/ASPR/BARDA); Borio, Luciana; Redd, John (OS/ASPR/SPPR); Dr. Eva Lee; KAUSHIK, SANGEETA; eric.mcdonald@sdcounty.ca.gov; CHRISTOPHER ALLEN; Richard Tubb; Cordts, Jerome (CTR); Baric, Ralph S; Schnitzer, Jay J.; jwleduc@utmb.edu; HARVEY, MELISSA; Lisa Koonin; Larry G; 1974usna@gmail.com; mvcallahan@mgh.harvard.edu; Lawler, James V; Ignacio, Joselito; David; Hassell, David (Chris) (OS/ASPR/IO); William Lang; Hanfling, Dan; Will Gaskins; Richard Hatchett; TARANTINO, DAVID A; Lee, Scott (OS/ASPR/EMMO); Lauren Johnston; Steven Jt(tCHFStDPH); Arthur L.. Kellerman MD, MPH, FACEP; Tom Bossert; Johnson, Robert (OS/ASPR/BARDA); HAMILTON, CAMERON; Adams, Jerome (HHS/OASH); David Gruber (david.gruber@dshs.texas.gov); Wade, David; Lewis Hofmann; WILKINSON, THOMAS; WOLFE, HERBERT; CharitytA@CDPH; Jim McLeod; Taylor, Justin (CTR); Marinissen, Maria (HHS/OS/OGA); Sutter, Mark; Mark Keim, MD MBA
Subject: RE: [EXTERNAL] RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

Singapore seeing an uptick. Case counts increasing sharply over the past several days.

Hong Kong also seeing an increase, but holding close to linear growth.
Sent from Mail for Windows 10

From: Mecher, Carter
Sent: Thursday, March 19, 2020 1:59 PM
To: Caneva, Duane; Jamison Day; Logan, Linda L; Dodgen, Daniel (OS/ASPR/SPPR); Venkayya, Rajeev; Ronny Jackson; Eastman, Alexander; Mansoura, Monique K.; LLogandakar; Walters, William (STATE.GOV); Parker Jr, Gerald W; DeBord, Kristin (OS/ASPR/SPPR); EVANS, MARIEFRED; Jerry Mothershead; Kevin Montgomery; Phillips, Sally (OS/ASPR/SPPR); DC; Matthew J CIV USARMY (USA); Andy Desjardins, MD; Fantinato, Jessica (USDA.GOV); Yeskey, Kevin; danny.shiau@usuhs.edu; Martin, Greg (state.gov); Ryan Morhard; Disbrow, Gary (OS/ASPR/BARDA); Borio, Luciana; Redd, John (OS/ASPR/SPPR); Dr. Eva Lee; KAUSHIK, SANGEETA; eric.mcdonald@sdcounty.ca.gov; CHRISTOPHER ALLEN; Richard Tubb; Cordts, Jerome (CTR); Baric, Ralph S; Schnitzer, Jay J.; jwleduc@utmb.edu; HARVEY, MELISSA; Lisa Koonin; Larry G; 1974usna@gmail.com; mvcallahan@mgh.harvard.edu; Lawler, James V; Ignacio, Joselito; David; Hassell, David (Chris) (OS/ASPR/IO); William Lang; Hanfling, Dan; Will Gaskins; Richard Hatchett; TARANTINO, DAVID A; Lee, Scott (OS/ASPR/EMMO); Lauren Johnston; Steven Jt(tCHFStDPH); Arthur L.. Kellerman MD, MPH, FACEP; Tom Bossert; Johnson, Robert (OS/ASPR/BARDA); HAMILTON, CAMERON; Adams, Jerome (HHS/OASH); David Gruber (david.gruber@dshs.texas.gov); Wade, David; Lewis Hofmann; WILKINSON, THOMAS; WOLFE, HERBERT; CharitytA@CDPH; Jim McLeod; Taylor, Justin (CTR); Marinissen, Maria (HHS/OS/OGA); Sutter, Mark; Mark Keim, MD MBA;
Subject: RE: [EXTERNAL] RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

I heard the VP announce domestic production of 35M per month for one manufacturer. The other mentioned was a little less. 35M per month is about 1M per day. We have 5,000 hospitals in US so that equates to about 200 N95s per hospital per day. What is our daily burn rate? It helps but likely not nearly enough. Even if we double that—400 per day per hospital. Better, but not enough.

One strategy to reduce PPE demand is to shift outpatient care to virtual care as quickly as we can. How could we turn ILINet around and use it as a means to broadcast to the ILINet providers and get them to move to virtual care—especially for all the ILI? The ILINet providers are seeing about 1.5M patients each week. On an average week in the US, there are 9.2M primary care/family practice visits. So ILINet providers account for about 14% of all the primary care/FP visits in the US. That is a good chunk to start with. Why can't CDC and the state and local PH depts reverse the flow of info back to them to urge them to move quickly to virtual care. We can monitor their effectiveness thru ILINet (monitor for a dramatic drop off in total visits and ILI visits).

I'm assuming they are not counting ILI telephone visits in the ILI totals.

Sent with BlackBerry Work
(www.blackberry.com)

From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Date: Thursday, Mar 19, 2020, 12:53 PM
To: Jamison Day Logan, Linda L <llogan@cvm.tamu.edu>, Dodgen, Daniel (OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>, Venkayya, Rajeev <rajeev.venkayya@takeda.com>, Ronny Jackson Eastman, Alexander <alexander.eastman@hq.dhs.gov>, Mansoura, Monique K. <mmansoura@mitre.org>, LLogandakar <llogandakar@gmail.com>, Walters, William (STATE.GOV) <walterswa2@state.gov>, Parker Jr, Gerald W <gparker@cvm.tamu.edu>, DeBord, Kristin (OS/ASPR/SPPR) <kristin.debord@hhs.gov>, EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>, Jerry Mothershead <jmothershead@patronusmedical.com>, Kevin Montgomery <kevin@collaborate.org>, Phillips, Sally (OS/ASPR/SPPR) <sally.phillips@hhs.gov>, DC <michelle.colby@usda.gov>, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>, Andy Desjardins, MD <adesjardins@patronusmedical.com>, Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>, Yeskey, Kevin <kevin.yeskey@hhs.gov>, danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>, Martin, Greg (state.gov) <martingj@state.gov>, Ryan Morhard <ryan.morhard@weforum.org>, Disbrow, Gary (OS/ASPR/BARDA) <gary.disbrow@hhs.gov>, Borio, Luciana <lborio@iqt.org>, Redd, John (OS/ASPR/SPPR) <john.redd@hhs.gov>, Dr. Eva Lee Mecher, Carter <Carter.Mecher@va.gov>, KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>, eric.mcdonald@sdcounty.ca.gov <eric.mcdonald@sdcounty.ca.gov>, CHRISTOPHER ALLEN <chrisallen Richard Tubb Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>, Baric, Ralph S <rbaric@email.unc.edu>, Schnitzer, Jay J. <jschnitzer@mitre.org>, jwleduc@utmb.edu <jwleduc@utmb.edu>, HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>, Lisa Koonin <lkoonin1 Larry G <padgetlg@state.gov>, mvcallahan@mgh.harvard.edu <mvcallahan@mgh.harvard.edu>, Lawler, James V <james.lawler@unmc.edu>, Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>, David <dmarcozzi@som.umaryland.edu>, Hassell, David (Chris) (OS/ASPR/IO) <david.hassell@hhs.gov>, William Lang <wlang@worldclinic.com>, Hanfling, Dan <dhanfling@iqt.org>, Will Gaskins <will.gaskins@efiia.com>, Richard Hatchett <richard.hatchett@cepi.net>, TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>, Lee, Scott (OS/ASPR/EMMO) <scott.lee@hhs.gov>, Lauren Johnston <ljohnston@patronusmedical.com>, Steven Jt(tCHFStDPH) <steven.stack@ky.gov>, Arthur L.. Kellerman MD, MPH, FACEP <arthur.kellermann@usuhs.edu>, Tom Bossert Johnson, Robert (OS/ASPR/BARDA) <robert.johnson@hhs.gov>, HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>, Adams, Jerome (HHS/OASH) <jerome.adams@hhs.gov>, David Gruber (david.gruber@dshs.texas.gov) <david.gruber@dshs.texas.gov>, Wade, David <david.wade@hq.dhs.gov>, Lewis Hofmann WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>, WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>, CharitytA@CDPH <charity.dean@cdph.ca.gov>, Jim McLeod <jmcleod@patronusmedical.com>, Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>, Marinissen, Maria (HHS/OS/OGA) <Maria.Marinissen@hhs.gov>, Sutter, Mark <mark.sutter@hq.dhs.gov>, Mark Keim, MD MBA <mark@disasterdoc.org>
Subject: [EXTERNAL] RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

The President announced today that legislation passed last night removes liability to the makers of N95 masks for an industrial setting to be used in a healthcare setting. This comparison by 3M comparing a surgical N95 to an industrial N95 is very helpful. Shows why this could make available millions of more masks.

https://multimedia.3m.com/mws/media/1794572O/surgical-n95-vs-standard-n95-which-to-consider.pdf

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From: Jamison Day <jamison.day@gmail.com>
Sent: Subject: Re: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

Contact tracing solutions provide some promise toward sustainable COVID-19 containment:
https://github.com/BDI-pathogens/covid-19_instant_tracing/blob/master/Policy%20forum%20-%20COVID-19%20containment%20by%20herd%20protection.pdf

Could the US overcome the ethical and socially acceptable barriers to 60% adoption?
Personally, I'm concerned about the government working with big tech to drive such efforts given track records in (not?) balancing privacy with value capture (https://www.washingtonpost.com/technology/2020/03/17/white-house-location-data-coronavirus/).

Alternative… First thoughts towards a protocol/standard for privacy-respecting contact tracing apps:
1. Store encrypted personal location data locally on the device.
2. Only retain data for a rolling time horizon (~21 days = max(incubation) + 7)
3. Provide regular COVID-19/ILI self-assessment & self-reporting of clinical test request/administration/result

a. There is potential here to integrate with Medical & Public Health provider data management activity (link to user_id / public key)
4. For identified high-risk users, send *minimal, anonymized, secure* location data to central server(s)
  a. Minimal: Only send location data from likely infectious period(s) (if timing is known for symptom onset or high-risk contact)
  b. Anonymized: Obscure location data for most common locations (i.e. home/work — index data on location boundaries)
  c. Secure: Location data is already encrypted, share decryption key with secure key management server(s)
5. Apps regularly query for high-risk movement overlapping with their own location movement boundaries
  a. If results exist, the app requests keys (audited), decrypts data, & compares detailed location and timing for high risk
  b. Update the user's infection risk rating(s) based on new geo-temporal contact interactions
...

Corollaries:
- Minimal sharing of anonymized high-value location data, encryption protected
- Individuals can audit others' requests of their infectious period location information
- User's shared data can be expired and/or deleted with kill-switch (i.e. removal of decryption key)
- Requests for communication with location contacts can be initiated (without providing prior identifying information)
- Near-real-time heat maps of high-risk areas can inform individual movement decisions & localized policy shifts

Hope this is useful food for thought. Or just a start towards discussing some standards for inter-op of solutions.

On March 19, 2020 at 08:36:39, Caneva, Duane (duane.caneva@hq.dhs.gov) wrote:

Please use this string going forward as of March 19, 2020, 10:35 EDT.

Duane C. Caneva, MD, MS
Chief Medical Officer
Department of Homeland Security
(o)
(c)
Duane.Caneva@hq.dhs.gov
DCaneva@dhs.ic.gov

Executive Assistant: Nichole Burton, nichole.burton2@associates.hq.dhs.gov,
The information in this e-mail may be privileged and confidential, intended only for the use of the addressee(s) above. Any unauthorized use or disclosure of this information is prohibited. If you have received this e-mail by mistake, please delete it and immediately contact the sender.

To: Carter
Cc: Dr. Eva Mecher, Carter[Carter.Mecher@va.gov]; Caneva, Duane[duane.caneva@hq.dhs.gov]; Jamison Logan, Linda L[llogan@cvm.tamu.edu]; Dodgen, Daniel (OS/ASPR/SPPR)[daniel.dodgen@hhs.gov]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Eastman, Alexander[alexander.eastman@hq.dhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Walters, William (STATE.GOV)[walterswa2@state.gov]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; DeBord, Kristin (OS/ASPR/SPPR)[kristin.debord@hhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; Jerry Mothershead[jmothershead@patronusmedical.com]; Kevin Montgomery[kevin@collaborate.org]; Phillips, Sally (OS/ASPR/SPPR)[sally.phillips@hhs.gov]; DC[michelle.colby@usda.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Andy Desjardins, MD[adesjardins@patronusmedical.com]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Martin, Greg (state.gov)[martingj@state.gov]; Ryan Morhard[ryan.morhard@weforum.org]; Disbrow, Gary (OS/ASPR/BARDA)[gary.disbrow@hhs.gov]; Borio, Luciana[lborio@iqt.org]; Redd, John (OS/ASPR/SPPR)[john.redd@hhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; CHRISTOPHER Richard Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Baric, Ralph S[rbaric@email.unc.edu]; Schnitzer, Jay J.[jschnitzer@mitre.org]; jwleduc@utmb.edu[jwleduc@utmb.edu]; HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; Lisa Koonin[lkoonin1(Larry G[padgetlg@state.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; Lawler, James V[james.lawler@unmc.edu]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; David[dmarcozzi@som.umaryland.edu]; Hassell, David (Chris) (OS/ASPR/IO)[david.hassell@hhs.gov]; William Lang[wlang@worldclinic.com]; Hanfling, Dan[dhanfling@iqt.org]; Will Gaskins[will.gaskins@efiia.com]; Richard Hatchett[richard.hatchett@cepi.net]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[scott.lee@hhs.gov]; Lauren Johnston[ljohnston@patronusmedical.com]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Arthur L.. Kellerman MD, MPH, FACEP[arthur.kellermann@usuhs.edu]; Tom Johnson, Robert (OS/ASPR/BARDA)[robert.johnson@hhs.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Adams, Jerome (HHS/OASH)[jerome.adams@hhs.gov]; David Gruber (david.gruber@dshs.texas.gov)[david.gruber@dshs.texas.gov]; Wade, David[david.wade@hq.dhs.gov]; Lewis WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; CharitytA@CDPH[charity.dean@cdph.ca.gov]; Jim McLeod[jmcleod@patronusmedical.com]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]; Marinissen, Maria (HHS/OS/OGA)[Maria.Marinissen@hhs.gov]; Sutter, Mark[mark.sutter@hq.dhs.gov]; Mark Keim, MD MBA[mark@disasterdoc.org]
From: Dr. Eva K
Sent: Thur 3/19/2020 4:16:51 PM (UTC-04:00)
Subject: RE: [EXTERNAL] RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

We must help Italy, but how? They truly need complete lockdown of household isolation and they need medical supplies/personnel+bed+equipment+multiple threads of treatment. Now every country is on fire. How is Russia doing? I believe they have the capability to help.

In US, we need medical tents, we must have them. Private sectors MD are closing their surgeries etc to save hospital resources. At some point, we need them as medical resources. We must protect all the healthcare workers.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Thursday, March 19, 2020 4:08 PM, Carter Mecher wrote:

Countries we are watching. Spain continues to trail Italy by about 8 days. UK is starting to accelerate (almost caught up to US in deaths). The UK has about 1/5th the population of the US. US data incomplete. France data delayed.

Date of 1st Case	24-Jan	1-Feb	30-Jan	24-Jan

Date of 1st Death	15-Feb		4-Mar		21-Feb		29-Feb	
	France (65M)		Spain (47M)		Italy (60M)		US (330M)	
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deat
20-Feb	12	1	2		3	0	15	
21-Feb	12	1	2		20	1	35	
22-Feb	12	1	2		63	2	35	
23-Feb	12	1	2		155	3	35	
24-Feb	12	1	3		229	7	53	
25-Feb	14	1	7		322	11	57	
26-Feb	18	2	13		453	12	60	
27-Feb	38	2	23		655	17	60	
28-Feb	57	2	32		889	21	63	
29-Feb	100	2	45		1,128	29	68	1
1-Mar	130	2	84		1,694	34	73	1

2-Mar	191	3	120		2,036	52	99	6
3-Mar	212	4	151		2,502	79	103	6
4-Mar	285	4	202		3,089	107	154	11
5-Mar	423	7	248	1	3,858	148	197	12
6-Mar	613	9	517	10	4,636	197	309	15
7-Mar	949	16	613	17	5,833	233	434	19
8-Mar	1,126	19	848	25	7,375	366	544	22
9-Mar	1,412	30	1,231	30	9,172	463	728	27
10-Mar	1,784	33	1,646	35	10,149	631	1,010	31
11-Mar	2,281	49	2,277	55	12,462	827	1,311	38
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701	40
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110	48
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952	58
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774	69

16-Mar	6,633	148						87
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423	108
18-Mar	9,134	244						154
19-Mar			17,395	803	41,035	3,405	*11,597*	*171*

Sent from Mail for Windows 10

From: Dr. Eva Lee
Sent: Thursday, March 19, 2020 3:51 PM
To: Carter Mecher; Dr. Eva K Lee
Cc: Mecher, Carter; Caneva, Duane; Jamison Day; Logan, Linda L; Dodgen, Daniel (OS/ASPR/SPPR); Venkayya, Rajeev; Ronny Jackson; Eastman, Alexander; Mansoura, Monique K.; LLogandakar; Walters, William (STATE.GOV); Parker Jr, Gerald W; DeBord, Kristin (OS/ASPR/SPPR); EVANS, MARIEFRED; Jerry Mothershead; Kevin Montgomery; Phillips, Sally (OS/ASPR/SPPR); DC; Matthew J CIV USARMY (USA); Andy Desjardins, MD; Fantinato, Jessica (USDA.GOV); Yeskey, Kevin; danny.shiau@usuhs.edu; Martin, Greg (state.gov); Ryan Morhard; Disbrow, Gary (OS/ASPR/BARDA); Borio, Luciana; Redd, John (OS/ASPR/SPPR); KAUSHIK, SANGEETA; eric.mcdonald@sdcounty.ca.gov; CHRISTOPHER ALLEN; Richard Tubb; Cordts, Jerome (CTR); Baric, Ralph S; Schnitzer, Jay J.; jwleduc@utmb.edu; HARVEY, MELISSA; Lisa Koonin; Larry G; mvcallahan@mgh.harvard.edu; Lawler, James V; Ignacio, Joselito; David; Hassell, David (Chris) (OS/ASPR/IO); William Lang; Hanfling, Dan; Will Gaskins; Richard Hatchett; TARANTINO, DAVID A; Lee, Scott (OS/ASPR/EMMO); Lauren Johnston; Steven Jt(tCHFStDPH); Arthur L.. Kellerman MD, MPH, FACEP; Tom Bossert; Johnson, Robert (OS/ASPR/BARDA); HAMILTON, CAMERON; Adams, Jerome (HHS/OASH); David Gruber (david.gruber@dshs.texas.gov); Wade, David; Lewis Hofmann; WILKINSON, THOMAS; WOLFE, HERBERT; CharitytA@CDPH; Jim McLeod; Taylor, Justin (CTR); Marinissen, Maria (HHS/OS/OGA); Sutter, Mark; Mark Keim, MD MBA
Subject: Re: [EXTERNAL] RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

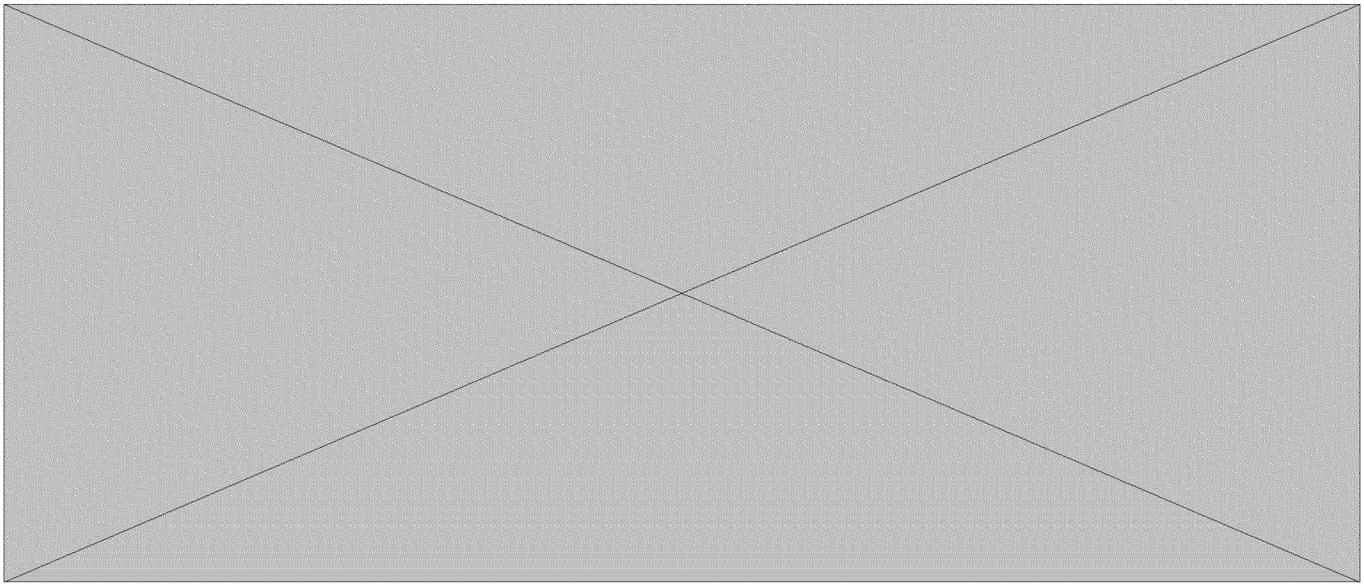
Italy need a complete isolation - with noone allow to be out, and a huge pump of hospital resources. They need medical personnel, hospital beds and PPE. I believe they need outside help to get through these. They have too many sick patients in the hospitals, too few medical personnel. Too late NPI and not unified messages of complete isolation of household. They really need extra help from outside to get through this, This is the last resort. Who has the resources? They need a lot!

For US (or anywhere): For quarantine of travelers returning etc, I think hotels or anything empty will be good, they must be reinforced to ensure disinfected environment. For medical care, we need sterilization of the entire building and everything. I do not know how that can be accomplished. Recall, hospital acquired infection can be dangerous, so medical tents (or Navy medical ships) are all good. The extra beds cannot be delayed in order for it to improve the fast-changing situation.

On a security issue, NYP was tracking all the covid-19 patients, and then they have too many and can't track all. Now just sampling.

On Thu, Mar 19, 2020 at 3:34 PM Carter Mecher wrote:

> Italy continues to accelerate with deaths in Italy passing the total deaths reported for all of China. It has now been 4 weeks since the first death was reported in Italy (so 4 weeks from first death on Feb 21 to 3,405 deaths on March 19). First death was on Day 53 of the graph below.



Italy (60M)			
Date	Cum Confirmed Cases	Cum Deaths	#Serious Condition (ICU)

30-Jan	2	0	
31-Jan	2	0	
7-Feb	3	0	
20-Feb	3	0	2
21-Feb	20	1	6
22-Feb	63	2	7
23-Feb	155	3	26
24-Feb	229	7	23
25-Feb	322	11	19
26-Feb	453	12	
27-Feb	655	17	
28-Feb	889	21	64
29-Feb	1,128	29	105
1-Mar	1,694	34	140

2-Mar	2,036	52	166
3-Mar	2,502	79	
4-Mar	3,089	107	295
5-Mar	3,858	148	351
6-Mar	4,636	197	462
7-Mar	5,833	233	567
8-Mar	7,375	366	650
9-Mar	9,172	463	733
10-Mar	10,149	631	877
11-Mar	12,264	831	1,028
12-Mar	15,113	1,016	1,153
13-Mar	17,660	1,266	1,328
14-Mar	21,157	1,441	1,518
15-Mar	24,747	1,809	1,672

16-Mar	27,980	2,158	1,851
17-Mar	31,506	2,503	2,060
18-Mar	35,713	2,978	2,257
19-Mar	41,035	3,405	2,498

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From: Carter Mecher
Sent: Thursday, March 19, 2020 3:17 PM
To: Mecher, Carter; Caneva, Duane; Jamison Day; Logan, Linda L; Dodgen, Daniel (OS/ASPR/SPPR); Venkayya, Rajeev; Ronny Jackson; Eastman, Alexander; Mansoura, Monique K.; LLogandakar; Walters, William (STATE.GOV); Parker Jr, Gerald W; DeBord, Kristin (OS/ASPR/SPPR); EVANS, MARIEFRED; Jerry Mothershead; Kevin Montgomery; Phillips, Sally (OS/ASPR/SPPR); DC; Matthew J CIV USARMY (USA); Andy Desjardins, MD; Fantinato, Jessica (USDA.GOV); Yeskey, Kevin; danny.shiau@usuhs.edu; Martin, Greg (state.gov); Ryan Morhard; Disbrow, Gary (OS/ASPR/BARDA); Borio, Luciana; Redd, John (OS/ASPR/SPPR); Dr. Eva Lee; KAUSHIK, SANGEETA; eric.mcdonald@sdcounty.ca.gov; CHRISTOPHER ALLEN; Richard Tubb; Cordts, Jerome (CTR); Baric, Ralph S; Schnitzer, Jay J.; jwleduc@utmb.edu; HARVEY, MELISSA; Lisa Koonin; Larry G; mvcallahan@mgh.harvard.edu; Lawler, James V; Ignacio, Joselito; David; Hassell, David (Chris) (OS/ASPR/IO); William Lang; Hanfling, Dan; Will Gaskins; Richard Hatchett; TARANTINO, DAVID A; Lee, Scott (OS/ASPR/EMMO); Lauren Johnston; Steven Jt(tCHFStDPH); Arthur L. Kellerman MD, MPH, FACEP; Tom Bossert; Johnson, Robert (OS/ASPR/BARDA); HAMILTON, CAMERON; Adams, Jerome (HHS/OASH); David Gruber (david.gruber@dshs.texas.gov); Wade, David; Lewis Hofmann; WILKINSON, THOMAS; WOLFE, HERBERT; CharitytA@CDPH; Jim McLeod; Taylor, Justin (CTR); Marinissen, Maria (HHS/OS/OGA); Sutter, Mark; Mark Keim, MD MBA
Subject: RE: [EXTERNAL] RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

Singapore seeing an uptick. Case counts increasing sharply over the past several days.

Hong Kong also seeing an increase, but holding close to linear growth.

Sent from Mail for Windows 10

From: Mecher, Carter
Sent: Thursday, March 19, 2020 1:59 PM
To: Caneva, Duane; Jamison Day; Logan, Linda L; Dodgen, Daniel (OS/ASPR/SPPR); Venkayya, Rajeev; Ronny Jackson; Eastman, Alexander; Mansoura, Monique K.; LLogandakar; Walters, William (STATE.GOV); Parker Jr, Gerald W; DeBord, Kristin (OS/ASPR/SPPR); EVANS, MARIEFRED; Jerry Mothershead; Kevin Montgomery; Phillips, Sally (OS/ASPR/SPPR); DC; Matthew J CIV USARMY (USA); Andy Desjardins, MD; Fantinato, Jessica (USDA.GOV); Yeskey, Kevin; danny.shiau@usuhs.edu; Martin, Greg (state.gov); Ryan Morhard; Disbrow, Gary (OS/ASPR/BARDA); Borio, Luciana; Redd, John (OS/ASPR/SPPR); Dr. Eva Lee; KAUSHIK, SANGEETA; eric.mcdonald@sdcounty.ca.gov; CHRISTOPHER ALLEN; Richard Tubb; Cordts, Jerome (CTR); Baric, Ralph S; Schnitzer, Jay J.; jwleduc@utmb.edu; HARVEY, MELISSA; Lisa Koonin; Larry G; mvcallahan@mgh.harvard.edu; Lawler, James V; Ignacio, Joselito; David; Hassell, David (Chris) (OS/ASPR/IO); William Lang; Hanfling, Dan; Will Gaskins; Richard Hatchett; TARANTINO, DAVID A; Lee, Scott (OS/ASPR/EMMO); Lauren Johnston; Steven Jt(tCHFStDPH); Arthur L.. Kellerman MD, MPH, FACEP; Tom Bossert; Johnson, Robert (OS/ASPR/BARDA); HAMILTON, CAMERON; Adams, Jerome (HHS/OASH); David Gruber (david.gruber@dshs.texas.gov); Wade, David; Lewis Hofmann; WILKINSON, THOMAS; WOLFE, HERBERT; CharitytA@CDPH; Jim McLeod; Taylor, Justin (CTR); Marinissen, Maria (HHS/OS/OGA); Sutter, Mark; Mark Keim, MD MBA;
Subject: RE: [EXTERNAL] RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

I heard the VP announce domestic production of 35M per month for one manufacturer. The other mentioned was a little less. 35M per month is about 1M per day. We have 5,000 hospitals in US so that equates to about 200 N95s per hospital per day. What is our daily burn rate? It helps but likely not nearly enough. Even if we double that—400 per day per hospital. Better, but not enough.

One strategy to reduce PPE demand is to shift outpatient care to virtual care as quickly as we can. How could we turn ILINet around and use it as a means to broadcast to the ILINet providers and get them to move to virtual care—especially for all the ILI? The ILINet providers are seeing about 1.5M patients each week. On an average week in the US, there are 9.2M primary care/family practice visits. So ILINet providers account for about 14% of all the primary care/FP visits in the US. That is a good chunk to start with. Why can't CDC and the state and local PH depts reverse the flow of info back to them to urge them to move quickly to virtual care. We can monitor their effectiveness thru ILINet (monitor for a dramatic drop off in total visits and ILI visits). I'm assuming they are not counting ILI telephone visits in the ILI totals.

Sent with BlackBerry Work
(www.blackberry.com)

From: Caneva, Duane <duane.caneva@hq.dhs.gov>

Date: Thursday, Mar 19, 2020, 12:53 PM

To: Jamison Day <jamison.day@gmail.com>, Logan, Linda L <llogan@cvm.tamu.edu>, Dodgen, Daniel (OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>, Venkayya, Rajeev <rajeev.venkayya@takeda.com>, Ronny Jackson Eastman, Alexander <alexander.eastman@hq.dhs.gov>, Mansoura, Monique K. <mmansoura@mitre.org>, LLogandakar <llogandakar@gmail.com>, Walters, William (STATE.GOV) <walterswa2@state.gov>, Parker Jr, Gerald W <gparker@cvm.tamu.edu>, DeBord, Kristin (OS/ASPR/SPPR) <kristin.debord@hhs.gov>, EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>, Jerry Mothershead <jmothershead@patronusmedical.com>, Kevin Montgomery <kevin@collaborate.org>, Phillips, Sally (OS/ASPR/SPPR) <sally.phillips@hhs.gov>, DC <michelle.colby@usda.gov>, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>, Andy Desjardins, MD <adesjardins@patronusmedical.com>, Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>, Yeskey, Kevin <kevin.yeskey@hhs.gov>, danny.shiau@usuhs.edu <danny.shiau@usuhs.edu>, Martin, Greg (state.gov) <martingj@state.gov>, Ryan Morhard <ryan.morhard@weforum.org>, Disbrow, Gary (OS/ASPR/BARDA) <gary.disbrow@hhs.gov>, Borio, Luciana <lborio@iqt.org>, Redd, John (OS/ASPR/SPPR) <john.redd@hhs.gov>, Dr. Eva Lee <eva.evalee.lee64@gmail.com>, Mecher, Carter <Carter.Mecher@va.gov>, KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>, eric.mcdonald@sdcounty.ca.gov <eric.mcdonald@sdcounty.ca.gov>, CHRISTOPHER ALLEN Richard Tubb <bg.richard.tubb@gmail.com>, Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>, Baric, Ralph S <rbaric@email.unc.edu>, Schnitzer, Jay J. <jschnitzer@mitre.org>, jwleduc@utmb.edu <jwleduc@utmb.edu>, HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>, Lisa Koonin <lkoonin1@gmail.com>, Larry G <padgetlg@state.gov>, 1974usna@gmail.com <1974usna@gmail.com>, mvcallahan@mgh.harvard.edu <mvcallahan@mgh.harvard.edu>, Lawler, James V <james.lawler@unmc.edu>, Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>, David <dmarcozzi@som.umaryland.edu>, Hassell, David (Chris) (OS/ASPR/IO) <david.hassell@hhs.gov>, William Lang <wlang@worldclinic.com>, Hanfling, Dan <dhanfling@iqt.org>, Will Gaskins <will.gaskins@efiia.com>, Richard Hatchett <richard.hatchett@cepi.net>, TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>, Lee, Scott (OS/ASPR/EMMO) <scott.lee@hhs.gov>, Lauren Johnston <ljohnston@patronusmedical.com>, Steven Jt(tCHFStDPH) <steven.stack@ky.gov>, Arthur L.. Kellerman MD, MPH, FACEP <arthur.kellermann@usuhs.edu>, Tom Bossert Johnson, Robert (OS/ASPR/BARDA) <robert.johnson@hhs.gov>, HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>, Adams, Jerome (HHS/OASH) <jerome.adams@hhs.gov>, David Gruber (david.gruber@dshs.texas.gov) <david.gruber@dshs.texas.gov>, Wade, David <david.wade@hq.dhs.gov>, Lewis Hofmann WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>, WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>, CharitytA@CDPH <charity.dean@cdph.ca.gov>, Jim McLeod <jmcleod@patronusmedical.com>, Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>, Marinissen, Maria (HHS/OS/OGA) <Maria.Marinissen@hhs.gov>, Sutter, Mark <mark.sutter@hq.dhs.gov>, Mark Keim, MD MBA <mark@disasterdoc.org>

Subject: [EXTERNAL] RE: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

The President announced today that legislation passed last night removes liability to the makers of N95 masks for an industrial setting to be used in a healthcare setting. This comparison by 3M comparing a surgical N95 to an industrial N95 is very helpful. Shows why this could make available millions of more masks.

https://multimedia.3m.com/mws/media/1794572O/surgical-n95-vs-standard-n95-which-to-consider.pdf

From: Jamison Day
Sent: Subject: Re: Red Dawn Reflux, Start 2020 0319, 10:35 EDT

Contact tracing solutions provide some promise toward sustainable COVID-19 containment:

https://github.com/BDI-pathogens/covid-19_instant_tracing/blob/master/Policy%20forum%20-%20COVID-19%20containment%20by%20herd%20protection.pdf

Could the US overcome the ethical and socially acceptable barriers to 60% adoption?

Personally, I'm concerned about the government working with big tech to drive such efforts given track records in (not?) balancing privacy with value capture (https://www.washingtonpost.com/technology/2020/03/17/white-house-location-data-coronavirus/).

Alternative… First thoughts towards a protocol/standard for privacy-respecting contact tracing apps:

1. Store encrypted personal location data locally on the device.

2. Only retain data for a rolling time horizon (~21 days = max(incubation) + 7)

3. Provide regular COVID-19/ILI self-assessment & self-reporting of clinical test request/administration/result

   a. There is potential here to integrate with Medical & Public Health provider data management activity (link to user_id / public key)

4. For identified high-risk users, send *minimal, anonymized, secure* location data to central server(s)

   a. Minimal: Only send location data from likely infectious period(s) (if timing is known for symptom onset or high-risk contact)

   b. Anonymized: Obscure location data for most common locations (i.e. home/work — index data on location boundaries)

   c. Secure: Location data is already encrypted, share decryption key with secure key management server(s)

5. Apps regularly query for high-risk movement overlapping with their own location movement boundaries

a. If results exist, the app requests keys (audited), decrypts data, & compares detailed location and timing for high risk

b. Update the user's infection risk rating(s) based on new geo-temporal contact interactions

...

Corollaries:

- Minimal sharing of anonymized high-value location data, encryption protected

- Individuals can audit others' requests of their infectious period location information

- User's shared data can be expired and/or deleted with kill-switch (i.e. removal of decryption key)

- Requests for communication with location contacts can be initiated (without providing prior identifying information)

- Near-real-time heat maps of high-risk areas can inform individual movement decisions & localized policy shifts

Hope this is useful food for thought. Or just a start towards discussing some standards for inter-op of solutions.

On March 19, 2020 at 08:36:39, Caneva, Duane (duane.caneva@hq.dhs.gov) wrote:

Please use this string going forward as of March 19, 2020, 10:35 EDT.

Duane C. Caneva, MD, MS

Chief Medical Officer

Department of Homeland Security

(o)

(c)

Duane.Caneva@hq.dhs.gov

DCaneva@dhs.ic.gov

Executive Assistant: Nichole Burton, nichole.burton2@associates.hq.dhs.gov,

The information in this e-mail may be privileged and confidential, intended only for the use of the addressee(s) above. Any unauthorized use or disclosure of this information is prohibited. If you have received this e-mail by mistake, please delete it and immediately contact the sender.

To: Dr. Eva K Pamela
Cc: William Lang[wlang@worldclinic.com]; Rob Darling[rdarling@patronusmedical.com]; Carter Mecher[cmecher@charter.net]; Caneva, Duane[duane.caneva@hq.dhs.gov]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Dr. Eva

eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; D isbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]; Cramer, Drew W. EOP/OMB[drew.w.cramer2@omb.eop.gov]; Wine GC[gcwine@patronusmedical.com]; Lee Sagert[lsagert@patronusmedical.com]; Kerri Wright[kwright@patronusmedical.com]; Kenneth Dominicana[kprado@patronusmedical.com]; Demetrie Munroe[dmunro@patronusmedical.com]; Dan Carlin[dcarlin@worldclinic.com]
From: Tracey McNamara[tmcNamara@westernu.edu]
Sent: Thur 3/19/2020 5:03:19 PM (UTC-04:00)
Subject: Has everyone seen this?

View this email online.

COVID-19 Testing Directory for Healthcare Professionals

AACC has launched the COVID-19 Testing Directory, a new resource for healthcare professionals seeking access to clinical laboratory testing services for SARS-CoV-2. The directory is comprised of U.S. clinical laboratories that are, or will be, performing these tests. AACC encourages you to share this directory with interested healthcare providers in need of COVID-19 testing for their patients. The directory can also be used by clinical laboratory professionals who wish to share information around the science and practice of SARS-CoV-2 testing.

VIEW THE DIRECTORY

If your high-complexity lab is currently conducting or preparing for SARS-CoV-2 testing, we encourage you to enroll your lab in the directory and sign up here. To update your lab's entry in the directory, submit your changes here.

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SEND FEEDBACK

From: Dr. Eva K Lee
Sent: Thursday, March 19, 2020 12:38 PM
To: Pamela Hughes
Cc: William Lang <wlang@worldclinic.com>; Rob Darling <rdarling@patronusmedical.com>; Carter Mecher Caneva, Duane <duane.caneva@hq.dhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dr. Eva Lee eric.mcdonald@sdcounty.ca.gov; Richard Tubb Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; D isbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann Arthur Kellermann <arthur.kellermann@usuhs.edu>; Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>; Cramer, Drew W. EOP/OMB <drew.w.cramer2@omb.eop.gov>; Wine GC <gcwine@patronusmedical.com>; Lee Sagert <lsagert@patronusmedical.com>; Kerri Wright <kwright@patronusmedical.com>; Kenneth Dominicana <kprado@patronusmedical.com>; Demetrie Munroe <dmunro@patronusmedical.com>; Dan Carlin <dcarlin@worldclinic.com>
Subject: Re: Red Dawn Responding, Start 16 March

Asymptomatic can only be tracked if we do community sampling testing. I don't know if any community has enough test-kits to do that. But yes, it is an issue.

Consider the following scenario: If everyone is in compliance with stay-at-home work and study, a large population is isolated. The remaining ones will interact, but will keep a far distance. We have at least slow down the rapid spread. The key then is to track those infected - (a)/symptomatic ones who would eventually be very sick and required hospitalization. Who would do that? Citizens sef-reporting? Then we need the testing and screening sites ready for them to come in. It takes about 2-5 days before people would seek medical help. By then they have already infected other.s

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Thursday, March 19, 2020 8:17 AM, Pamela Hughes wrote:

Your Information would be fantastic to track. I fear we are still struggling to get the testing done and back in a timely manner.
Asymptomatic testing is another consideration.
Also, NP swab accuracy? how many are we missing b/c the virus is not expressing in the NP?

Trying to track Treatment options that are effective as well,
https://docs.google.com/document/d/e/2PACX-1vTi-g18ftNZUMRAj2SwRPodtscFio7bJ7GdNgbJAGbdfF67WuRJB3ZsidgpidB2eocFHAVjIL-7deJ7/pub

good info on why Chloroquine seems to be working.

Pam
Hughes Functional Medicine Consulting, LLC

PHughes@PatronusMedical.com
PHughes@Healthlynked.com

On Mar 19, 2020, at 7:43 AM, William Lang <wlang@worldclinic.com> wrote:

All-

I spent enough time in government to know what I'm going to ask is probably impossible, but for tracking as this rolls over us, it seems it would be extremely useful to have the following data (of note, at this point, for tracking purposes, the Admitted data would be much more useful than "cases" since the definition of case is all over the lot and often depends on availability of testing, the restrictions placed on who could be tested, and how that number will artificially grow as more tests are available. Admissions are more criteria-based for now):

These are all incidence numbers, collected daily, by state and major metro areas)							
	Tested	Positive	Admitted	Discharged	Intubated	Extubated	Dead
0-19 w/cormorbidities							
0-19 wo/cormorbidities							
20-39 w/cormorbidities							
20-39 wo/cormorbidities							

40-49 w/cormorbidities							
40-49 wo/cormorbidities							
50-59 w/cormorbidities							
50-59 wo/cormorbidities							
60-69 w/cormorbidities							
60-69 wo/cormorbidities							
70-79 w/cormorbidities							
70-79 wo/cormorbidities							
80+ w/cormorbidities							
80+ wo/comorbidities							

How would you get that? I haven't heard anything about anyone like CDC or the Assoc of State and Territorial Health Officials or the Council of State & Territorial Epidemiologists trying to get a national standard SIMPLE reporting tool fielded. I'm afraid that people are trying to use "big data" to decipher this, when simple data might be more useful initially. Something like a SIMPLE data collection sheet and corresponding simple database:

Tracking Number
Name
Birthdate
Date of Initial Presentation
Comorbidities: ◯ Cardiac ◯ Uncontrolled HTN ◯ Controlled HTN ◯ Diabetes ◯ Resp ◯ Immune Issues
Initial Symptoms: ◯ Fever ◯ Cough ◯ Sneezing/Rhinorrhea ◯ Headache ◯ SOB ◯ GI ◯ Myalgias
Date of Initial Testing
Date of 1st Positive Test
Date of Hospitalization
Date of initial Intubation
Date of final Extubation
Date of Discharge
Treatment received
Date of Last Positive test
Date of Clearing Negative test
Date of Death

-Bill Lang

William L. Lang, MD, MHA
COL, MC, US Army (ret)
Medical Director
WorldClinic | Continuous Connected Care
tel: | fax:
direct (admin and non-urgent patient care):

From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Thursday, March 19, 2020 12:42 AM
To: William Lang <wlang@worldclinic.com>
Cc: Carter Mecher Dr. Eva K Lee Caneva, Duane <duane.caneva@hq.dhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dr. Eva Lee eric.mcdonald@sdcounty.ca.gov; Richard Tubb <bg.richard.tubb Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <chrisallen Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; D isbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann Arthur Kellermann <arthur.kellermann@usuhs.edu>; Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>; Cramer, Drew W. EOP/OMB <drew.w.cramer2@omb.eop.gov>; Pam Hughes <phughes@patronusmedical.com>; Wine GC <gcwine@patronusmedical.com>; Lee Sagert <lsagert@patronusmedical.com>; Kerri Wright <kwright@patronusmedical.com>; Kenneth Dominicana <kprado@patronusmedical.com>; Demetrie Munroe <dmunro@patronusmedical.com>; Dan Carlin <dcarlin@worldclinic.com>
Subject: Re: Red Dawn Responding, Start 16 March

I suspect a major factor will in fact be that young people are ignoring social distancing recommendations but there are probably other factors. .

Robert G. Darling, MD, FACEP, FFSEM
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On Thu, Mar 19, 2020 at 12:26 AM William Lang <wlang@worldclinic.com> wrote:

Can anyone comment on the NYT article today noting a higher than expected number of hospitalizations in younger people? The article acknowledges that there is no information on comorbidities in the data, but still a huge question and if true and not related to comorbidities, undermines much of what many have been communicating to groups. Could it be that our message is getting out to the at-risk groups and they are self protecting much more effectively, so what we are seeing is not a change in hospitalization rates by age group, but just higher infection rates in younger ages because they are not being as cautious (maybe too much to hope).

Thanks

-Bill

William L. Lang, MD, MHA
Medical Director
email: wlang@worldclinic.com

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28 Chargers Road | PO Box 1919 | New London, NH 03257
tel: ____________ | fax: ____________
direct (patient care): ____________ | direct (non-clinical): ____________

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On Mar 18, 2020, at 9:54 PM, Carter Mecher ____________ wrote:

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Hotspots—NY, WA, and CA

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	2		2

4-Mar	10		2
5-Mar	19		4
6-Mar	40		7
7-Mar	78		12
8-Mar	105		14
9-Mar	142		25
10-Mar	173		32
11-Mar	216		53
12-Mar	325		88
13-Mar	524		137
14-Mar	613	1	185
15-Mar	729	5	269
16-Mar	950	7	464
17-Mar	1,374	12	923
18-Mar	2,382	20	1,871

	WA State (7.8M)		King County (2.2M)		Snohomish County (0.8M)	
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
21-Jan	1				1	
29-Feb	3		1		2	
1-Mar	6		4	1	2	
2-Mar	18	5	14	5	4	
3-Mar	27	9	21	8	6	1
4-Mar	39	10	31	9	8	1
5-Mar	70	10	51	9	18	1
6-Mar	79	11	58	10	19	1
7-Mar	102	16	71	15	27	1
8-Mar	136	18	83	17	31	1

9-Mar	162	21	116	20	37	1
10-Mar	267	24	190	22	54	1
11-Mar	366	29	234	26	68	2
12-Mar	457	31	270	27	108	3
13-Mar	568	37	328	32	166	4
14-Mar	642	40	387	35	154	4
15-Mar	769	42	420	37	176	4
16-Mar	904	48	488	43	200	4
17-Mar	1,012	52	569	43	254	6
18-Mar	1,187	66	562	56	310	6

	WA State (7.8M)		NYC State (19.4M)		CA State (40M)		US (330M)		C
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cur
29-Feb	3		0				68	1	
1-Mar	6		1				73	1	
2-Mar	18	5	1		43		99	6	
3-Mar	27	9	2		43		103	6	
4-Mar	39	10	10				154	11	
5-Mar	70	10	19		60	1	197	12	
6-Mar	79	11	40		69	1	309	15	
7-Mar	102	16	78		88	1	434	19	
8-Mar	136	18	105		114	1	544	22	
9-Mar	162	21	142		133	1	728	27	
10-Mar	267	24	173		157	2	1,010	31	
11-Mar	366	29	216		177	3	1,311	38	
12-Mar	457	31	325		198	4	1,701	40	
13-Mar	568	37	524		247	5	2,110	48	

14-Mar	642	40	613	1	288	5	2,952	58	1
15-Mar	769	42	729	5	335	6	3,774	69	1
16-Mar	904	48	950	7	392	6	4,661	87	2
17-Mar	1,012	52	1,374	12	598	13	6,423	108	3
18-Mar	1,187	66	2,382	20	757	13	8,715	138	4

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 5:16 PM
To: Caneva, Duane
Cc: Carter Mecher; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov;CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH;Martin, Greg (state.gov); Walters, William (STATE.GOV);HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR);DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander;EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO);Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins;Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Duane, thanks for sending this article. I suppose John is on this group since he talked about many things we have talked about:

0. Diamond Princess as in Carter's analysis (I like Carter's :-)).
1. The 1% infection in US population that I and Carter have been talking about for a long time.
2. Sampling testing within communities (which we have discussed since day 1)
3. He doesn't know or he questions if closing schools works (Ok. I do not agree with him)
4. the flattening of the curve. The famous one shown on all the media is not quite right. It is not theoretically correct. The flattening looks different, but ok.
5. It's true current hospital patients are vulnerable, we all agree and hence we advocate pre-emptive **early** NPI implementation
6. Worrying about kids in the malsl -- I don't think this is like H1N1 anymore. Malls are closing also.
7. Herd immunity. From the analysis, it seems that we will need to get to 49% to 89% among different communities to get herd immunity. In that case, many people will die. The clinicians I talked to today say that the lungs of patients are severely damaged -- not immediately, ususally late in the treatment period, like day 10. And they remain badly damaged even when recovered.

8 This statement --
"That’s another reason we need data about the exact level of the epidemic activity." Really what data? Every data in such type of pandemic will have noise, will not be perfect, and will never be perfect. Even if we are done now, a year from now, we sill won't have perfect data. That is just a fact. if we need perfect date to operate, we won't be operating most of the time. We need to be able to develop robust models that can describe the situation using partial information. It needs not perfect, but **it should provide useful insights to act.**

That's why Carter's, Richard's graphs putting side-by-side on how Italy's data matches China's are so important. Those curves -- they truly do not lie. James said we're 6-8 weeks behind China, we're indeed, as Carter reminds us everyday (almost) with those little graphs. That's why I advocate early intervention, because I assume when I see one case, we're 14 days behind, and we're, as I can see from the models.

That's also why the intervention graphs I show for each city, they need not be perfect, because we only want to see the patterns of changes, and how it changes.

9. Social distancing alone is not sufficient. We need screening, we need testing and we need to intercept new infection (put them in self-quarantine or isolation and contact trace), we need all of them so that we have maintain the infection at a rate to our healthcare systems to treat the sick patients properly.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 4:34 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:

> https://www.statnews.com/2020/03/17/a-fiasco-in-the-making-as-the-coronavirus-pandemic-takes-hold-we-are-making-decisions-without-reliable-data/
>
> **From:** Dr. Eva K Lee
> **Sent:** Wednesday, March 18, 2020 3:34 PM
> **To:**
> **Subject:** RE: Red Dawn Responding, Start 16 March
>
> Carter, it is very hard to slam the brake for Italy unless they can pour in the extra beds/medical resources. I am still trying to untangle my thousands of graphs. Once I can select which ones to show, you can see immediatley why all these come together.
>
> Singapore and Hobg Kong are seeing increase too, because now so many sources are coming in. So the global effect is felt to the greatest extent.
>
> https://newton.isye.gatech.edu/DrLee/
> mobile:
>
> Sent with ProtonMail Secure Email.
>
> ------- Original Message -------
> On Wednesday, March 18, 2020 3:24 PM, Carter Mecher
> wrote:
>
>> Italy is still accelerating.
>> <image001.png>
>>
>> Sent from Mail for Windows 10

From: Carter Mecher
Sent: Wednesday, March 18, 2020 2:33 PM
To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee
Cc: Hunt, Richard (OS/ASPR/EMMO);Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com;eric.mcdonald@sdcounty.ca.gov;Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov;CHRISTOPHER ALLEN; [redacted] Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON;Dodgen, Daniel (OS/ASPR/SPPR);DeBord, Kristin (OS/ASPR/SPPR);Phillips, Sally (OS/ASPR/SPPR);Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH);Adams, Jerome (HHS/OASH);Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev;Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
Subject: RE: Red Dawn Responding, Start 16 March

Here is preliminary data on the current state of some of the countries in Europe we are following. UK is really exploding. Spain and Italy numbers continue to climb. Italy is now at 2,978 deaths. Italy is now about to overtake Hubei (3,122 total deaths). Will add US and France data later.

Date of 1st Case	24-Jan		1-Feb		30-Jan		24
Date of 1st Death	15-Feb		4-Mar		21-Feb		29
	France (65M)		Spain (47M)		Italy (60M)		US (
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases
20-Feb	12	1	2		3	0	15
21-Feb	12	1	2		20	1	35
22-Feb	12	1	2		63	2	35
23-Feb	12	1	2		155	3	35
24-Feb	12	1	3		229	7	53
25-Feb	14	1	7		322	11	57
26-Feb	18	2	13		453	12	60
27-Feb	38	2	23		655	17	60

28-Feb	57	2	32		889	21	63
29-Feb	100	2	45		1,128	29	68
1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	103
4-Mar	285	4	202		3,089	107	154
5-Mar	423	7	248	1	3,858	148	197
6-Mar	613	9	517	10	4,636	197	309
7-Mar	949	16	613	17	5,833	233	434
8-Mar	1,126	19	848	25	7,375	366	544
9-Mar	1,412	30	1,231	30	9,172	463	728
10-Mar	1,784	33	1,646	35	10,149	631	1,010
11-Mar	2,281	49	2,277	55	12,462	827	1,311
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423
18-Mar			13,716	533	35,713	2,978	

Sent from Mail for Windows 10

From: Carter Mecher
Sent: Wednesday, March 18, 2020 2:21 PM
To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee
Cc: Hunt, Richard (OS/ASPR/EMMO);Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com;eric.mcdonald@sdcounty.ca.gov;Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov;CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON;Dodgen, Daniel (OS/ASPR/SPPR);DeBord, Kristin (OS/ASPR/SPPR);Phillips, Sally (OS/ASPR/SPPR);Matthew J CIV

USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH);Adams, Jerome (HHS/OASH);Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev;Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
Subject: RE: Red Dawn Responding, Start 16 March

Just some updates. First NYC. NYC seeing explosive growth in cases and deaths. See story below. Prevalence is much higher than numbers suggest to already have 20 deaths and have 5/1,300 attendees to a conference last week (0.4%) confirmed to have COVID.

5 doctors test positive for coronavirus after attending a meeting in NYC om March 8-11. Roughly 1,300 physicians and educators traveled from across the country and Canada for a Midtown assembly organized by the Council of Residency Directors (CORD) in Emergency Medicine, opening the possibility that hundreds of emergency room doctors have been exposed to the disease.

Below is a summary of NY State and NYC numbers

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	1		1
4-Mar	10		1
5-Mar	19		3
6-Mar	40		4
7-Mar	78		11
8-Mar	105		12
9-Mar	142		19
10-Mar	173		36
11-Mar	216		52
12-Mar	325		95

13-Mar	524		213
14-Mar	613	1	269
15-Mar	729	5	329
16-Mar	950	7	453
17-Mar	1,374	12	644
18-Mar	2,382	20	1,339

Sent from Mail for Windows 10

From: Caneva, Duane
Sent: Wednesday, March 18, 2020 1:52 PM
To: Tracey McNamara; Dr. Eva K Lee; Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO);Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov;CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON;Dodgen, Daniel (OS/ASPR/SPPR);DeBord, Kristin (OS/ASPR/SPPR);Phillips, Sally (OS/ASPR/SPPR);Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH);Adams, Jerome (HHS/OASH);Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev;Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
Subject: RE: Red Dawn Responding, Start 16 March

DHS Science and Technology Master Question List most recent version attached and available here: https://www.dhs.gov/publication/st-master-question-list-covid-19
For questions you would like added, contact: justin.taylor@associates.hq.dhs.gov

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Wednesday, March 18, 2020 1:21 PM
To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and

Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).
https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 10:09 AM
To: Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>;eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>;david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>;mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>;alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>;david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH)

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Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee <evalee-
wrote:

> I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).
>
> I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.
>
> https://newton.isye.gatech.edu/DrLee/
> mobile:
>
> Sent with ProtonMailSecure Email.
>
> ------- Original Message -------
> On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:
>
>> Some update on screening and testing -
>> 1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.
>>
>> 2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms

etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.

Will have hospital resource analysis in my next email.

Best, Eva

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMailSecure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:12 PM, Carter Mecher
wrote:

> Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.
>
> I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care (home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we

are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REP

YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TO PA
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,4
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,4
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,4
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,4
2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,4
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,4
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,4
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,4
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,2
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,4
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,4

2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,4
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,3
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,4
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,4
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,4
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,4
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,5
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,5
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,5
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,4
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,4
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,3

Sent from Mailfor Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)
Sent: Wednesday, March 18, 2020 11:27 AM
To: Carter Mecher;Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara;Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com;Caneva, Duane (DHS.GOV);eric.mcdonald@sdcounty.ca.gov;Richard Tubb; William Lang; Mecher, Carter (VA.GOV);Tom Bossert; Richard Hatchett; Lawler, James V;Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov;CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana;Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH;Martin, Greg (state.gov);Walters, William (STATE.GOV);HAMILTON, CAMERON;Dodgen,

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Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the puck ~~is going~~ has already gone. "

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we're left w/ clinicians being confronted w/ Sophie's choice decisions - crisis care.

Hoping all (government

by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher

Sent: Tuesday, March 17, 2020 7:42 PM
To: Brian Benson <brian.benson@icloud.com>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee- Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee <eva.evalee.lee64@gmail.com>;1974usna@gmail.com; Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>;eric.mcdonald@sdcounty.ca.gov; Richard Tubb <bg.richard.tubb@gmail.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert

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Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		
Date of 1st Death	15-Feb		4-Mar		21-Feb		
	France (65M)		Spain (47M)		Italy (60M)		
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cu
20-Feb	12	1	2		3	0	
21-Feb	12	1	2		20	1	
22-Feb	12	1	2		63	2	
23-Feb	12	1	2		155	3	
24-Feb	12	1	3		229	7	
25-Feb	14	1	7		322	11	
26-Feb	18	2	13		453	12	

27-Feb	38	2	23		655	17
28-Feb	57	2	32		889	21
29-Feb	100	2	45		1,128	29
1-Mar	130	2	84		1,694	34
2-Mar	191	3	120		2,036	52
3-Mar	212	4	151		2,502	79
4-Mar	285	4	202		3,089	107
5-Mar	423	7	248	1	3,858	148
6-Mar	613	9	517	10	4,636	197
7-Mar	949	16	613	17	5,833	233
8-Mar	1,126	19	848	25	7,375	366
9-Mar	1,412	30	1,231	30	9,172	463
10-Mar	1,784	33	1,646	35	10,149	631
11-Mar	2,281	49	2,277	55	12,462	827
12-Mar	2,876	61	3,059	86	15,113	1,016
13-Mar	3,661	79	4,209	120	17,660	1,266
14-Mar	4,499	91	5,841	191	21,157	1,441
15-Mar	5,423	127	7,753	288	24,747	1,809
16-Mar	6,633	148	9,942	342	27,980	2,158
17-Mar	7,730	175	11,316	510	31,506	2,503

Sent from Mailfor Windows 10

From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara;Dr. Eva K Lee; Rob Darling, MD; Carter Mecher;Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonal

d@sdcounty.ca.gov; Richard Tubb; William Lang;Mecher, Carter (VA.GOV);Tom Bossert; Richard Hatchett; Lawler, James V;Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov;CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana;Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH;Martin, Greg (state.gov);Walters, William (STATE.GOV);HAMILTON, CAMERON;Dodgen, Daniel (OS/ASPR/SPPR);DeBord, Kristin (OS/ASPR/SPPR);Phillips, Sally (OS/ASPR/SPPR);Matthew J CIV USARMY (USA);Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV);alexander.eastman@hq.dhs.gov;EVANS, MARIEFRED;jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov;KAUSHIK, SANGEETA;Lee, Scott (OS/ASPR/EMMO);Larry G; Ryan Morhard; Steven Jt(tCHFStDPH);Adams, Jerome (HHS/OASH);Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu;Cordts, Jerome (CTR);Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery;Logan, Linda L; LLogandakar; Venkayya, Rajeev;Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston;Lewis Hofmann
Subject: Re: Red Dawn

Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

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Channels

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On Mar
17,
2020, at

1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager
Assistant Secretary for Preparedness and Response
Office: ___________
Cell: ___________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee <evalee- Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson <brian.benson@icloud.com>; Carter Mecher

Dr. Eva Lee <eva.evalee.lee64@gmail.com>;1974usna@gmail.com; Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>;eric.mcdonald@sdcounty.ca.gov; Richard Tubb <bg.richard.tubb@gmail.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert

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v; CHRISTOPHER ALLEN <CHRISALLEN_10@msn.com>;jamison.day@gmail.com; Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>;mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@g
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>; Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson <ronny.jacksonmd@gmail.com>; Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.
Tracey

Get Outlook for Android

<image006.jpg>

From: Rob Darling, MD
<rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee <evalee-

Cc: Brian Benson
<brian.benson@icloud.com>; Tracey McNamara
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>; Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson <ronny.jacksonmd@gmail.com>; Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

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Fax:
Mobile:

https://protect2.fireeye.com/url?k=bb1df19b-e748f888-bb1dc0a4-0cc47adb5650-e7e5a3a6fc182949&u=https://protect2.fireeye.com/url?k=d1ed9cb6-8db985ca-d1edad89-0cc47adc5fa2-d2905c2d6444c751&u=http://www.patronusmedical.com/
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https://protect2.fireeye.com/url?k=e4e30baa-b8b602b9-e4e33a95-0cc47adb5650-a852491b127cbe73&u=https://protect2.fireeye.com/url?k=17778e33-4b23974f-1777bf0c-0cc47adc5fa2-6b8ef5753e83490b&u=

http://www.linkedin.com/in/robertgdarling/

On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee <evalee-

wrote:

> We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to

Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

evalee-

https://newton.isye.gatech.edu/DrLee/
mobile: 404-432-6835

Sent withProtonMailSecure Email.

------- Original Message -------
On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian.benson@icloud.com> wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may

need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same? What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.
Tracey

GetOutlook for Android

<image007.jpg>

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 7:03:58 AM
To: Carter Mecher Caneva, Duane <duane.caneva@hq.dhs.gov>; McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Richard Tubb Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; CHRISTOPHER ALLEN <CHRISALLEN_ Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>;jwleduc@utmb.edu<jwleduc@utmb.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary

(OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>;danny.shiau@usuhs.edu<danny.shiau@usuhs.edu>; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Brian Benson Dr. Eva K Lee <evalee-g .

Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many,**I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities

impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

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It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 9:09 AM
To: Carter Mecher
Cc: 1974usna@gmail.com;Caneva, Duane;McDonald, Eric;Richard Tubb;Rob Darling, MD;William Lang;Mecher, Carter;Tom Bossert;Richard Hatchett;Lawler, James V;Parker Jr, Gerald

W;Hanfling, Dan;Gruber,David (DSHS);CHRISTOPHER ALLEN;jamison.day@gmail.com;Borio, Luciana;Tracey McNamara;Baric, Ralph S;Hunt, Richard (OS/ASPR/EMMO);WILKINSON, THOMAS;M.D.;David;CharitytA@CDPH;Gregory J;Walters, William (STATE.GOV);HAMILTON, CAMERON;Dodgen,tDanielt(OS/ASPR/SPPR);DeBord,Kristin (OS/ASPR/SPPR);Phillips, Sally (OS/ASPR/SPPR);Matthew J CIV USARMY (USA);Lisa Koonin;HARVEY, MELISSA;WOLFE, HERBERT;Eastman, Alexander;EVANS, MARIEFRED;jwleduc@utmb.edu;Johnson, Robert (OS/ASPR/BARDA);Yeskey, Kevin;Disbrow, Gary (OS/ASPR/BARDA);Redd, John (OS/ASPR/SPPR);Hassell, David (Chris) (OS/ASPR/IO);Hamel, Joseph (OS/ASPR/IO);Wade, David;TARANTINO, DAVID A;KAUSHIK, SANGEETA;Lee, Scott (OS/ASPR/EMMO);Larry G;Ryan Morhard;Steven Jt(tCHFStDPH);Adams, Jerome (HHS/OASH);Mansoura, Monique K.;Fantinato, Jessica (USDA.GOV);DC;danny.shiau@usuhs.edu;Cordts, Jerome (CTR);Schnitzer, Jay J.;Ignacio, Joselito;Will Gaskins;Kevin Montgomery;Logan, Linda L;LLogandakar;Venkayya, Rajeev;Ronny Jackson;Brian Benson;Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe +US affecting the covid-19 counts - from 100 to 157 - https://www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-

efforts-idUSKBN2140A4

"If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong." Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases**were people with recent travel history, Lam said. Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk

cases. The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

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Sent with ProtonMail Secure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher <cmecher@charter.net> wrote:

> Worth the read.
> https://osf.io/fd4rh/?view_only=c2f00d

fe3677
493faa
421fc2
ea38e2
95

Sent from Mail for Windows 10

From: 1
Sent: Monday, March 16, 2020 11:58 PM
To: 'Caneva, Duane';'McDonald, Eric';'Carter Mecher';'Richard Tubb';'Rob Darling, MD';'William Lang';'Mecher, Carter';'Tom Bossert';'Richard Hatchett';'Lawler, James V';'Parker Jr, Gerald W';'Hanfling, Dan';'Gruber,David (DSHS)';'Dr. Eva Lee';'CHRISTOPHER ALLEN';jamison.day@gmail.com;'Borio, Luciana';'Tracey McNamara';'Baric, Ralph S';'Hunt, Richard (OS/ASPR/EMMO)';'WILKINSON, THOMAS';'M.D.';'David';'CharitytA@CDPH';'Gregory J';'Walters, William (STATE.GOV)';'HAMILTON, CAMERON';'Dodgen,tDanielt(OS/ASPR/SPPR)';'DeBord,Kristin (OS/ASPR/SPPR)';'Phillips, Sally (OS/ASPR/SPPR)';'Matthew J CIV USARMY (USA)';'Lisa Koonin';'HARVEY, MELISSA';'WOLFE, HERBERT';'Eastman, Alexander';'EVANS, MARIEFRED';jwleduc@utmb.edu;'Johnson, Robert (OS/ASPR/BARDA)';'Yeskey, Kevin';'Disbrow, Gary (OS/ASPR/BARDA)';'Redd, John (OS/ASPR/SPPR)';'Hassell, David (Chris) (OS/ASPR/IO)';'Hamel, Joseph (OS/ASPR/IO)';'Wade, David';'TARANTINO, DAVID A';'KAUSHIK, SANGEETA';'Lee, Scott (OS/ASPR/EMMO)';'Larry G';'Ryan Morhard';'Steven Jt(tCHFStDPH)';'Adams, Jerome (HHS/OASH)';'Mansoura, Monique K.';'Fantinato, Jessica (USDA.GOV)';'DC';danny.shiau@usuhs.edu;'Cordts, Jerome (CTR)';'Schnitzer, Jay J.';'Ignacio, Joselito';'Will Gaskins';'Kevin Montgomery';'Logan, Linda L';'LLogandakar';'Venkayya, Rajeev';'Ronny Jackson';'Brian Benson';'Dr. Eva K Lee'
Subject: RE: Red Dawn Responding, Start 16 March

Looks like my attachments did not make it through for some reason

From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Sent: Monday, March 16, 2020 10:54 PM
To: McDonald, Eric <Eric.McDonald@sdcounty.ca.gov>; Carter Mecher Richard Tubb <bg.richard.tubb@gmail.com>; Rob Darling, MD <rdarling@patronusmedical.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter <Carter.Mecher@va.gov>; Tom Bossert

Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; Gruber,David (DSHS) <David.Gruber@dshs.texas.gov>; Dr. Eva Lee <eva.evalee.lee64@gmail.com>; CHRISTOPHER ALLEN <CHRISALLEN_1 Borio, Luciana <LBorio@iqt.org>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; M.D. <MVCALLAHAN@mgh.harvard.edu>; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Gregory J <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen,tDanielt(OS/ASPR/SPPR) <daniel.dodgen@hhs.gov>; DeBord,Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>;jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>;danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson MothersheadtJerry L. Brian Benson <brian. Dr. Eva K Lee <evalee-

Subject: Red Dawn Responding, Start 16 March

New string. Please use this going forward.

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electronic message in error, please notify us immediately and destroy the original message and all copies.

To: Dr. Eva K Pamela
Cc: William Lang[wlang@worldclinic.com]; Rob Darling[rdarling@patronusmedical.com]; Carter Mecher[cmecher@charter.net]; Caneva, Duane[duane.caneva@hq.dhs.gov]; Hunt, Richard (OS/ASPR/EMMO)[Richard.Hunt@hhs.gov]; Brian Hamel, Joseph (OS/ASPR/IO)[Joseph.Hamel@hhs.gov]; Dr. Eva

eric.mcdonald@sdcounty.ca.gov[eric.mcdonald@sdcounty.ca.gov]; Richard Mecher, Carter (VA.GOV)[carter.mecher@va.gov]; Tom Richard Hatchett[richard.hatchett@cepi.net]; Lawler, James V[james.lawler@unmc.edu]; Parker Jr, Gerald W[gparker@cvm.tamu.edu]; Hanfling, Dan[DHanfling@iqt.org]; david.gruber@dshs.texas.gov[david.gruber@dshs.texas.gov]; CHRISTOPHER Borio, Luciana[LBorio@iqt.org]; Baric, Ralph S[rbaric@email.unc.edu]; WILKINSON, THOMAS[THOMAS.WILKINSON@hq.dhs.gov]; mvcallahan@mgh.harvard.edu[mvcallahan@mgh.harvard.edu]; David[DMarcozzi@som.umaryland.edu]; CharitytA@CDPH[Charity.Dean@cdph.ca.gov]; Martin, Greg (state.gov)[MartinGJ@state.gov]; Walters, William (STATE.GOV)[walterswa2@state.gov]; HAMILTON, CAMERON[cameron.hamilton@hq.dhs.gov]; Dodgen, Daniel (OS/ASPR/SPPR)[Daniel.Dodgen@hhs.gov]; DeBord, Kristin (OS/ASPR/SPPR)[Kristin.DeBord@hhs.gov]; Phillips, Sally (OS/ASPR/SPPR)[Sally.Phillips@hhs.gov]; Matthew J CIV USARMY (USA)[matthew.j.hepburn.civ@mail.mil]; Lisa Koonin[lkoonin1(HARVEY, MELISSA[melissa.harvey@hq.dhs.gov]; WOLFE, HERBERT[HERBERT.WOLFE@hq.dhs.gov]; Eastman, Alexander[alexander.eastman@hq.dhs.gov]; EVANS, MARIEFRED[mariefred.evans@associates.hq.dhs.gov]; jwleduc@utmb.edu[jwleduc@utmb.edu]; Johnson, Robert (OS/ASPR/BARDA)[Robert.Johnson@hhs.gov]; Yeskey, Kevin[kevin.yeskey@hhs.gov]; D isbrow, Gary (OS/ASPR/BARDA)[Gary.Disbrow@hhs.gov]; Redd, John (OS/ASPR/SPPR)[John.Redd@hhs.gov]; Hassell, David (Chris) (OS/ASPR/IO)[David.Hassell@hhs.gov]; Wade, David[david.wade@hq.dhs.gov]; TARANTINO, DAVID A[david.a.tarantino@cbp.dhs.gov]; KAUSHIK, SANGEETA[sangeeta.kaushik@hq.dhs.gov]; Lee, Scott (OS/ASPR/EMMO)[Scott.Lee@hhs.gov]; Larry G[PadgetLG@state.gov]; Ryan Morhard[Ryan.Morhard@weforum.org]; Steven Jt(tCHFStDPH)[steven.stack@ky.gov]; Adams, Jerome (HHS/OASH)[Jerome.Adams@hhs.gov]; Mansoura, Monique K.[mmansoura@mitre.org]; Fantinato, Jessica (USDA.GOV)[jessica.fantinato@usda.gov]; DC[michelle.colby@usda.gov]; danny.shiau@usuhs.edu[danny.shiau@usuhs.edu]; Cordts, Jerome (CTR)[jerome.cordts@associates.hq.dhs.gov]; Schnitzer, Jay J.[jschnitzer@mitre.org]; Ignacio, Joselito[joselito.ignacio@fema.dhs.gov]; Will Gaskins[will.gaskins@efiia.com]; Kevin Montgomery[kevin@collaborate.org]; Logan, Linda L[llogan@cvm.tamu.edu]; Venkayya, Rajeev[rajeev.venkayya@takeda.com]; Ronny Andy Desjardins[adesjardins@patronusmedical.com]; Jerry Mothershead[jmothershead@patronusmedical.com]; Jim McLeod[jmcleod@patronusmedical.com]; Lauren Johnston[ljohnston@patronusmedical.com]; Lewis Arthur Kellermann[arthur.kellermann@usuhs.edu]; Taylor, Justin (CTR)[justin.taylor@associates.hq.dhs.gov]; Cramer, Drew W. EOP/OMB[drew.w.cramer2@omb.eop.gov]; Wine GC[gcwine@patronusmedical.com]; Lee Sagert[lsagert@patronusmedical.com]; Kerri Wright[kwright@patronusmedical.com]; Kenneth Dominicana[kprado@patronusmedical.com]; Demetrie Munroe[dmunro@patronusmedical.com]; Dan Carlin[dcarlin@worldclinic.com]
From: Tracey McNamara[tmcNamara@westernu.edu]
Sent: Thur 3/19/2020 5:11:33 PM (UTC-04:00)
Subject: Have you seen this article on hydroxychloroquine and azithromycin tx

https://www.mediterranee-infection.com/wp-content/uploads/2020/03/Hydroxychloroquine_final_DOI_IJAA.pdf

From: Dr. Eva K Lee
Sent: Thursday, March 19, 2020 12:38 PM
To: Pamela Hughes
Cc: William Lang <wlang@worldclinic.com>; Rob Darling <rdarling@patronusmedical.com>; Carter Mecher Caneva, Duane <duane.caneva@hq.dhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dr. Eva Lee eric.mcdonald@sdcounty.ca.gov; Richard Tubb Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; D isbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott

(OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann Arthur Kellermann <arthur.kellermann@usuhs.edu>; Taylor, Justin (CTR) <justin.taylor@associates.hq.dhs.gov>; Cramer, Drew W. EOP/OMB <drew.w.cramer2@omb.eop.gov>; Wine GC <gcwine@patronusmedical.com>; Lee Sagert <lsagert@patronusmedical.com>; Kerri Wright <kwright@patronusmedical.com>; Kenneth Dominicana <kprado@patronusmedical.com>; Demetrie Munroe <dmunro@patronusmedical.com>; Dan Carlin <dcarlin@worldclinic.com>
Subject: Re: Red Dawn Responding, Start 16 March

Asymptomatic can only be tracked if we do community sampling testing. I don't know if any community has enough test-kits to do that. But yes, it is an issue.

Consider the following scenario: If everyone is in compliance with stay-at-home work and study, a large population is isolated. The remaining ones will interact, but will keep a far distance. We have at least slow down the rapid spread. The key then is to track those infected - (a)/symptomatic ones who would eventually be very sick and required hospitalization. Who would do that? Citizens sef-reporting? Then we need the testing and screening sites ready for them to come in. It takes about 2-5 days before people would seek medical help. By then they have already infected other.s

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Thursday, March 19, 2020 8:17 AM, Pamela Hughes wrote:

> Your Information would be fantastic to track. I fear we are still struggling to get the testing done and back in a timely manner.
> Asymptomatic testing is another consideration.
> Also, NP swab accuracy? how many are we missing b/c the virus is not expressing in the NP?
>
> Trying to track Treatment options that are effective as well,
> https://docs.google.com/document/d/e/2PACX-1vTi-g18ftNZUMRAj2SwRPodtscFio7bJ7GdNgbJAGbdfF67WuRJB3ZsidgpidB2eocFHAVjIL-7deJ7/pub
>
> good info on why Chloroquine seems to be working.
>
> Pam
> Hughes Functional Medicine Consulting, LLC
>
> PHughes@PatronusMedical.com
> PHughes@Healthlynked.com
>
>> On Mar 19, 2020, at 7:43 AM, William Lang <wlang@worldclinic.com> wrote:
>>
>> All-
>>
>> I spent enough time in government to know what I'm going to ask is probably impossible, but for tracking as this rolls over us, it seems it would be extremely useful to have the following data (of note, at this point, for tracking purposes, the Admitted data would be much more useful than "cases" since the definition of case is all over the lot and often depends on availability of testing, the restrictions placed on who could be tested, and how that number will artificially grow as more tests are available. Admissions

are more criteria-based for now):

These are all incidence numbers, collected daily, by state and major metro areas)							
	Tested	Positive	Admitted	Discharged	Intubated	Extubated	Dead
0-19 w/cormorbidities							
0-19 wo/cormorbidities							
20-39 w/cormorbidities							
20-39 wo/cormorbidities							
40-49 w/cormorbidities							
40-49 wo/cormorbidities							
50-59 w/cormorbidities							
50-59 wo/cormorbidities							
60-69 w/cormorbidities							
60-69 wo/cormorbidities							
70-79 w/cormorbidities							
70-79 wo/cormorbidities							
80+ w/cormorbidities							
80+ wo/comorbidities							

How would you get that? I haven't heard anything about anyone like CDC or the Assoc of State and Territorial Health Officials or the Council of State & Territorial Epidemiologists trying to get a national standard SIMPLE reporting tool fielded. I'm afraid that people are trying to use "big data" to decipher this, when simple data might be more useful initially. Something like a SIMPLE data collection sheet and corresponding simple database:

Tracking Number
Name
Birthdate
Date of Initial Presentation
Comorbidities: ◯ Cardiac ◯ Uncontrolled HTN ◯ Controlled HTN ◯ Diabetes ◯ Resp ◯ Immune Issues
Initial Symptoms: ◯ Fever ◯ Cough ◯ Sneezing/Rhinorrhea ◯ Headache ◯ SOB ◯ GI ◯ Myalgias
Date of Initial Testing
Date of 1st Positive Test
Date of Hospitalization
Date of initial Intubation
Date of final Extubation

Date of Discharge
Treatment received
Date of Last Positive test
Date of Clearing Negative test
Date of Death

-Bill Lang

William L. Lang, MD, MHA
COL, MC, US Army (ret)
Medical Director
WorldClinic | Continuous Connected Care
tel: | fax:
direct (admin and non-urgent patient care):

From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Thursday, March 19, 2020 12:42 AM
To: William Lang <wlang@worldclinic.com>
Cc: Carter Mecher Dr. Eva K Lee Caneva, Duane <duane.caneva@hq.dhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dr. Eva Lee eric.mcdonald@sdcounty.ca.gov; Richard Tubb <bg.richard.tubb@gmail.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <chrisallen Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1(HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; D isbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>; danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann Arthur Kellermann <arthur.kellermann@usuhs.edu>; Taylor, Justin (CTR)

<justin.taylor@associates.hq.dhs.gov>; Cramer, Drew W. EOP/OMB <drew.w.cramer2@omb.eop.gov>; Pam Hughes <phughes@patronusmedical.com>; Wine GC <gcwine@patronusmedical.com>; Lee Sagert <lsagert@patronusmedical.com>; Kerri Wright <kwright@patronusmedical.com>; Kenneth Dominicana <kprado@patronusmedical.com>; Demetrie Munroe <dmunro@patronusmedical.com>; Dan Carlin <dcarlin@worldclinic.com>
Subject: Re: Red Dawn Responding, Start 16 March

I suspect a major factor will in fact be that young people are ignoring social distancing recommendations but there are probably other factors. .

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

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rdarling@patronusmedical.com
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On Thu, Mar 19, 2020 at 12:26 AM William Lang <wlang@worldclinic.com> wrote:

Can anyone comment on the NYT article today noting a higher than expected number of hospitalizations in younger people? The article acknowledges that there is no information on comorbidities in the data, but still a huge question and if true and not related to comorbidities, undermines much of what many have been communicating to groups. Could it be that our message is getting out to the at-risk groups and they are self protecting much more effectively, so what we are seeing is not a change in hospitalization rates by age group, but just higher infection rates in younger ages because they are not being as cautious (maybe too much to hope).

Thanks

-Bill

William L. Lang, MD, MHA
Medical Director
email: wlang@worldclinic.com

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tel: ____________ | fax: ____________
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On Mar 18, 2020, at 9:54 PM, Carter Mecher ____________ wrote:

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Hotspots—NY, WA, and CA

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	2		2
4-Mar	10		2
5-Mar	19		4
6-Mar	40		7
7-Mar	78		12
8-Mar	105		14
9-Mar	142		25
10-Mar	173		32
11-Mar	216		53
12-Mar	325		88
13-Mar	524		137
14-Mar	613	1	185
15-Mar	729	5	269
16-Mar	950	7	464
17-Mar	1,374	12	923
18-Mar	2,382	20	1,871

	WA State (7.8M)		King County (2.2M)		Snohomish County (0.8M)	
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths
21-Jan	1				1	
29-Feb	3		1		2	
1-Mar	6		4	1	2	

2-Mar	18	5	14	5	4	
3-Mar	27	9	21	8	6	1
4-Mar	39	10	31	9	8	1
5-Mar	70	10	51	9	18	1
6-Mar	79	11	58	10	19	1
7-Mar	102	16	71	15	27	1
8-Mar	136	18	83	17	31	1
9-Mar	162	21	116	20	37	1
10-Mar	267	24	190	22	54	1
11-Mar	366	29	234	26	68	2
12-Mar	457	31	270	27	108	3
13-Mar	568	37	328	32	166	4
14-Mar	642	40	387	35	154	4
15-Mar	769	42	420	37	176	4
16-Mar	904	48	488	43	200	4
17-Mar	1,012	52	569	43	254	6
18-Mar	1,187	66	562	56	310	6

	WA State (7.8M)		NYC State (19.4M)		CA State (40M)		US (330M)		C
Date	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cur
29-Feb	3		0				68	1	
1-Mar	6		1				73	1	
2-Mar	18	5	1		43		99	6	
3-Mar	27	9	2		43		103	6	
4-Mar	39	10	10				154	11	
5-Mar	70	10	19		60	1	197	12	
6-Mar	79	11	40		69	1	309	15	

7-Mar	102	16	78		88	1	434	19	
8-Mar	136	18	105		114	1	544	22	
9-Mar	162	21	142		133	1	728	27	
10-Mar	267	24	173		157	2	1,010	31	
11-Mar	366	29	216		177	3	1,311	38	
12-Mar	457	31	325		198	4	1,701	40	
13-Mar	568	37	524		247	5	2,110	48	
14-Mar	642	40	613	1	288	5	2,952	58	1
15-Mar	769	42	729	5	335	6	3,774	69	1
16-Mar	904	48	950	7	392	6	4,661	87	2
17-Mar	1,012	52	1,374	12	598	13	6,423	108	3
18-Mar	1,187	66	2,382	20	757	13	8,715	138	4

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 5:16 PM
To: Caneva, Duane
Cc: Carter Mecher; Tracey McNamara; Hunt, Richard (OS/ASPR/EMMO); Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov;CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH;Martin, Greg (state.gov); Walters, William (STATE.GOV);HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR);DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander;EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; D isbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO);Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome (HHS/OASH); Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins;Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev; Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR); Cramer, Drew W. EOP/OMB
Subject: RE: Red Dawn Responding, Start 16 March

Duane, thanks for sending this article. I suppose John is on this group since he talked about many things we have talked about:

0. Diamond Princess as in Carter's analysis (I like Carter's :-)).

1. The 1% infection in US population that I and Carter have been talking about for a long time.
2. Sampling testing within communities (which we have discussed since day 1)
3. He doesn't know or he questions if closing schools works (Ok. I do not agree with him)
4. the flattening of the curve. The famous one shown on all the media is not quite right. It is not theoretically correct. The flattening looks different, but ok.
5. It's true current hospital patients are vulnerable, we all agree and hence we advocate pre-emptive **early** NPI implementation
6. Worrying about kids in the malsl -- I don't think this is like H1N1 anymore. Malls are closing also.
7. Herd immunity. From the analysis, it seems that we will need to get to 49% to 89% among different communities to get herd immunity. In that case, many people will die. The clinicians I talked to today say that the lungs of patients are severely damaged -- not immediately, ususally late in the treatment period, like day 10. And they remain badly damaged even when recovered.
8 This statement --
"That's another reason we need data about the exact level of the epidemic activity."
Really what data? Every data in such type of pandemic will have noise, will not be perfect, and will never be perfect. Even if we are done now, a year from now, we sill won't have perfect data. That is just a fact. if we need perfect date to operate, we won't be operating most of the time. We need to be able to develop robust models that can describe the situation using partial information. It needs not perfect, but **it should provide useful insights to act.**

That's why Carter's, Richard's graphs putting side-by-side on how Italy's data matches China's are so important. Those curves -- they truly do not lie. James said we're 6-8 weeks behind China, we're indeed, as Carter reminds us everyday (almost) with those little graphs. That's why I advocate early intervention, because I assume when I see one case, we're 14 days behind, and we're, as I can see from the models.

That's also why the intervention graphs I show for each city, they need not be perfect, because we only want to see the patterns of changes, and how it changes.

9. Social distancing alone is not sufficient. We need screening, we need testing and we need to intercept new infection (put them in self-quarantine or isolation and contact trace), we need all of them so that we have maintain the infection at a rate to our healthcare systems to treat the sick patients properly.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 4:34 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:

> https://www.statnews.com/2020/03/17/a-fiasco-in-the-making-as-the-coronavirus-pandemic-takes-hold-we-are-making-decisions-without-reliable-data/
>
> **From:** Dr. Eva K Lee
> **Sent:** Wednesday, March 18, 2020 3:34 PM
> **To:**
> **Subject:** RE: Red Dawn Responding, Start 16 March
>
> Carter, it is very hard to slam the brake for Italy unless they can pour in the extra beds/medical resources. I am still trying to untangle my thousands of graphs. Once

I can select which ones to show, you can see immediatley why all these come together.

Singapore and Hobg Kong are seeing increase too, because now so many sources are coming in. So the global effect is felt to the greatest extent.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 3:24 PM, Carter Mecher wrote:

> Italy is still accelerating.
> <image001.png>
>
> Sent from Mail for Windows 10
>
> **From:** Carter Mecher
> **Sent:** Wednesday, March 18, 2020 2:33 PM
> **To:** Caneva, Duane; Tracey McNamara; Dr. Eva K Lee
> **Cc:** Hunt, Richard (OS/ASPR/EMMO);Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov;CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON;Dodgen, Daniel (OS/ASPR/SPPR);DeBord, Kristin (OS/ASPR/SPPR);Phillips, Sally (OS/ASPR/SPPR);Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH);Adams, Jerome (HHS/OASH);Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev;Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
> **Subject:** RE: Red Dawn Responding, Start 16 March
>
> Here is preliminary data on the current state of some of the countries in Europe we are following. UK is really exploding. Spain and Italy numbers continue to climb. Italy is now at 2,978 deaths. Italy is now about to overtake Hubei (3,122 total deaths). Will add US and France data later.

Date of 1st Case	24-Jan		1-Feb		30-Jan		24
Date of 1st Death	15-Feb		4-Mar		21-Feb		29
	France (65M)		Spain (47M)		Italy (60M)		US (
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases
20-Feb	12	1	2		3	0	15

21-Feb	12	1	2		20	1	35
22-Feb	12	1	2		63	2	35
23-Feb	12	1	2		155	3	35
24-Feb	12	1	3		229	7	53
25-Feb	14	1	7		322	11	57
26-Feb	18	2	13		453	12	60
27-Feb	38	2	23		655	17	60
28-Feb	57	2	32		889	21	63
29-Feb	100	2	45		1,128	29	68
1-Mar	130	2	84		1,694	34	73
2-Mar	191	3	120		2,036	52	99
3-Mar	212	4	151		2,502	79	103
4-Mar	285	4	202		3,089	107	154
5-Mar	423	7	248	1	3,858	148	197
6-Mar	613	9	517	10	4,636	197	309
7-Mar	949	16	613	17	5,833	233	434
8-Mar	1,126	19	848	25	7,375	366	544
9-Mar	1,412	30	1,231	30	9,172	463	728
10-Mar	1,784	33	1,646	35	10,149	631	1,010
11-Mar	2,281	49	2,277	55	12,462	827	1,311
12-Mar	2,876	61	3,059	86	15,113	1,016	1,701
13-Mar	3,661	79	4,209	120	17,660	1,266	2,110
14-Mar	4,499	91	5,841	191	21,157	1,441	2,952
15-Mar	5,423	127	7,753	288	24,747	1,809	3,774
16-Mar	6,633	148	9,942	342	27,980	2,158	4,661
17-Mar	7,730	175	11,316	510	31,506	2,503	6,423
18-Mar			13,716	533	35,713	2,978	

Sent from Mail for Windows 10

From: Carter Mecher
Sent: Wednesday, March 18, 2020 2:21 PM
To: Caneva, Duane; Tracey McNamara; Dr. Eva K Lee
Cc: Hunt, Richard (OS/ASPR/EMMO);Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com;eric.mcdonald@sdcounty.ca.gov;Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov;CHRISTOPHER ALLEN; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON;Dodgen, Daniel (OS/ASPR/SPPR);DeBord, Kristin (OS/ASPR/SPPR);Phillips, Sally (OS/ASPR/SPPR);Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH);Adams, Jerome (HHS/OASH);Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev;Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
Subject: RE: Red Dawn Responding, Start 16 March

Just some updates. First NYC. NYC seeing explosive growth in cases and deaths. See story below. Prevalence is much higher than numbers suggest to already have 20 deaths and have 5/1,300 attendees to a conference last week (0.4%) confirmed to have COVID.

5 doctors test positive for coronavirus after attending a meeting in NYC om March 8-11. Roughly 1,300 physicians and educators traveled from across the country and Canada for a Midtown assembly organized by the Council of Residency Directors (CORD) in Emergency Medicine, opening the possibility that hundreds of emergency room doctors have been exposed to the disease.

Below is a summary of NY State and NYC numbers

	NYC State (19.4M)		NYC (8.6M)
Date	Cum Cases	Cum Deaths	Cum Cases
29-Feb	0		0
1-Mar	1		1
2-Mar	1		1
3-Mar	1		1
4-Mar	10		1
5-Mar	19		3

6-Mar	40		4
7-Mar	78		11
8-Mar	105		12
9-Mar	142		19
10-Mar	173		36
11-Mar	216		52
12-Mar	325		95
13-Mar	524		213
14-Mar	613	1	269
15-Mar	729	5	329
16-Mar	950	7	453
17-Mar	1,374	12	644
18-Mar	2,382	20	1,339

Sent from Mail for Windows 10

From: Caneva, Duane
Sent: Wednesday, March 18, 2020 1:52 PM
To: Tracey McNamara; Dr. Eva K Lee; Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO);Brian Benson; Hamel, Joseph (OS/ASPR/IO); Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com;eric.mcdonald@sdcounty.ca.gov;Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov;CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON;Dodgen, Daniel (OS/ASPR/SPPR);DeBord, Kristin (OS/ASPR/SPPR);Phillips, Sally (OS/ASPR/SPPR);Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; TARANTINO, DAVID A; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH);Adams, Jerome (HHS/OASH);Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu; Cordts, Jerome (CTR); Schnitzer, Jay J.; Ignacio, Joselito; Will Gaskins; Kevin Montgomery; Logan, Linda L; LLogandakar; Venkayya, Rajeev;Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston; Lewis Hofmann; Arthur Kellermann; Taylor, Justin (CTR)
Subject: RE: Red Dawn Responding, Start 16 March

DHS Science and Technology Master Question List most recent version attached and available

here: https://www.dhs.gov/publication/st-master-question-list-covid-19
For questions you would like added,
contact: justin.taylor@associates.hq.dhs.gov

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Wednesday, March 18, 2020 1:21 PM
To: Subject: RE: Red Dawn Responding, Start 16 March

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

SPECIES SUSCEPTIBILITY

Colleagues from the European Association of Zoo and Wildlife Veterinarians' Infectious Disease Committee have put together a science-based fact sheet on what is known about SARS-COV-2. (as of today).
https://cdn.ymaws.com/www.aazv.org/resource/resmgr/protocols/covid19_faq_17march_2020.eaz.pdf

This is an excellent document that summarizes what is known from experimental trials. It alos let's us know who is doing what. If you scroll down to the table, you will see that cats are listed as LIKELY to be infected.

If you want a little microcosm of the human-animal interface, zoos would be a great place to run long-term studies of keepers and the species they work with. Zoos are a goldmine of data. I set up a nationwide network of zoos in the USA for WNV surveillance in 2002 and could do it again if there is interest.

Tracey

From: Dr. Eva K Lee
Sent: Wednesday, March 18, 2020 10:09 AM
To: Carter Mecher
Cc: Hunt, Richard (OS/ASPR/EMMO) <Richard.Hunt@hhs.gov>; Brian Benson Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Tracey McNamara <tmcNamara@westernu.edu>; Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>;eric.mcdonald@sdcounty.ca.gov; Richard Tubb William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <james.lawler@unmc.edu>; Parker Jr, Gerald W <gparker@cvm.tamu.edu>; Hanfling, Dan <DHanfling@iqt.org>;david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN <CHRISALLEN Borio, Luciana <LBorio@iqt.org>; Baric, Ralph S <rbaric@email.unc.edu>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>;mvcallahan@mgh.harvard.edu; David <DMarcozzi@som.umaryland.edu>; CharitytA@CDPH <Charity.Dean@cdph.ca.gov>; Martin, Greg (state.gov) <MartinGJ@state.gov>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR)

<Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1 HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; Wolfe, Herbert (DHS.GOV) <herbert.wolfe@hq.dhs.gov>;alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin (OS/ASPR/IO) <Kevin.Yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Wade, David <david.wade@hq.dhs.gov>;david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>; Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Steven Jt(tCHFStDPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Mansoura, Monique K. <mmansoura@mitre.org>; Fantinato, Jessica (USDA.GOV) <jessica.fantinato@usda.gov>; DC <michelle.colby@usda.gov>;danny.shiau@usuhs.edu; Cordts, Jerome (CTR) <jerome.cordts@associates.hq.dhs.gov>; Schnitzer, Jay J. <jschnitzer@mitre.org>; Ignacio, Joselito (FEMA.DHS.GOV) <joselito.ignacio@fema.dhs.gov>; Will Gaskins <will.gaskins@efiia.com>; Kevin Montgomery <kevin@collaborate.org>; Logan, Linda L <llogan@cvm.tamu.edu>; LLogandakar Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

Please protect the VA population seriously. I have finished the hospital analysis and bed/hospital resources are best used along with NPI implementation. I assume NPI is in good shape now. So we focus on the beds. Some of the covid-19 patients will need pretty long hospital stay. I still maintain it is very important to protect the healthcare providers and separate very carefully covid-19 patients and other ICU/ED hospitalized patients of other illnesses. We cannot cross-infected. The damage to the lungs is very serious and the virus attacks the weak point in the immune system. In that matter, anyone with underlying conditions will be vulnerable. We have so many people with coexisting chronic diseases in the US, they don't have to be necessarily 80 years-old. Carter, you should rapidly screen+test VA patients if needed. Please do.

https://newton.isye.gatech.edu/DrLee/
mobile:

Sent with ProtonMail Secure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:50 PM, Dr. Eva K Lee <evalee- wrote:

> I guess it is 400,000 test kits distributed based on places with >50 infected cases (from the WH briefinfs now).
>
> I jjust talked to doctors who have treated these patients in Hong Kong. They said by day 10 of hospitalization, even if there is no coughing, the lung is seriously damaged and when patients recover (at all), the lung's damage remains.
>
> https://newton.isye.gatech.edu/DrLee/

mobile:

Sent with ProtonMailSecure Email.

------- Original Message -------
On Wednesday, March 18, 2020 12:42 PM, Dr. Eva K Lee wrote:

> Some update on screening and testing -
> 1. Stockpile said that 14,000 test kits have been sent to 37 sites. I do not know where but some of your locations should have them. I don't know who to ask for the exact distribution.
>
> 2. Attached is update on rapid risk-assessment screening and diagnostic testing. CDC asked that I included their website for references on the terms etc. Local public health can add other features as they see fit. I also add a combined screening + testing. That could work out very efficiently. I will be happy to optimize each local site's capabity.
>
> Will have hospital resource analysis in my next email.
>
> Best, Eva
>
> https://newton.isye.gatech.edu/DrLee/
> mobile:
>
> Sent with ProtonMailSecure Email.
>
> ------- Original Message -------
> On Wednesday, March 18, 2020 12:12 PM, Carter Mecher wrote:
>
>> Agree Rick. Also think we need to move from NPIs and testing (current focus of leaders) to other challenges in anticipation of where we need to skate to including PPE and reducing background demand on the healthcare system, as much as is possible. We should exhaust everything we can do before crisis standards of care.
>>
>> I am also watching flu surveillance (ILI in particular). Outpatient clinics ought to be pivoting immediately to virtual care (telephone care/IM/facetime) to care for patients. No patient with ILI ought to be now presenting to an outpatient clinic. Either they are mildly ill and can be managed at home with telephone care

(home isolation and home quarantine of other household members) or they are sick enough to require ER care and hospitalization (so don't need an outpatient visit). ILI should go to 0. If it doesn't then we have failed in messaging. That is what I was concerned about when monitoring ILI in Washington state, Seattle, NYC, and Chicago, where ILI rose. That will be the best monitor of how well we are pivoting outpatient care to respond to this fight. I would think that CDC would broadcast this message thru the ILINet network of providers. I will watch the raw numbers that CDC reports. Need to doublecheck with CDC if telephone visits count in ILINet data. Does anyone know? I am pushing to shut it all down in VA except just a small amount of outpatient care for only those things that require F2F care (and only doing that to keep it out of the ER). The new ILI data comes out Friday. States monitor this daily so they should have an idea if total visits to ILINet sentinel providers are declining. Realize that the most recent data is only thru week 10 (week ending March 7). We have lots of HHS addresses, could someone from HHS check on ILINet about telephone visits—are they included in ILI numbers?

PERCENTAGE OF VISITS FOR INFLUENZA-LIKE-ILLNESS REP									
YEAR	WEEK	AGE 0-4	AGE 5-24	AGE 25-49	AGE 25-64	AGE 50-64	AGE 65	ILITOTAL	TO PAT
2019	40	6,240	7,679	4,824	X	1,772	1,443	21,958	1,4
2019	41	6,573	7,672	5,152	X	2,021	1,601	23,019	1,4
2019	42	7,304	8,325	5,557	X	2,115	1,646	24,947	1,4
2019	43	7,894	9,400	6,076	X	2,310	1,793	27,473	1,4

2019	44	8,678	10,091	6,140	X	2,283	1,758	28,950	1,4
2019	45	10,560	12,535	7,160	X	2,464	1,839	34,558	1,4
2019	46	11,424	13,565	7,853	X	2,743	1,965	37,550	1,4
2019	47	12,659	16,901	9,064	X	3,103	2,135	43,862	1,4
2019	48	14,363	14,680	9,117	X	3,206	2,358	43,724	1,2
2019	49	13,795	16,270	11,857	X	3,940	2,774	48,636	1,4
2019	50	14,666	21,780	12,772	X	4,134	2,898	56,250	1,4
2019	51	17,984	29,085	16,217	X	4,845	3,348	71,479	1,4
2019	52	24,048	33,932	24,578	X	7,659	5,398	95,615	1,3
2020	1	21,576	23,388	27,619	X	9,227	6,862	88,672	1,4
2020	2	15,496	22,634	23,518	X	8,186	5,437	75,271	1,4
2020	3	16,468	29,466	21,311	X	7,364	4,714	79,323	1,4
2020	4	18,452	35,078	23,482	X	7,928	4,623	89,563	1,4
2020	5	20,133	43,742	28,605	X	9,461	5,406	107,347	1,5
2020	6	20,047	45,059	29,602	X	9,979	5,617	110,304	1,5
2020	7	17,158	36,481	26,168	X	9,158	5,366	94,331	1,5
2020	8	15,096	28,011	22,872	X	8,243	5,093	79,315	1,4
2020	9	13,430	24,663	21,632	X	8,076	4,923	72,724	1,4
2020	10	13,139	24,478	23,069	X	8,522	5,420	74,628	1,3

Sent from Mailfor Windows 10

From: Hunt, Richard (OS/ASPR/EMMO)
Sent: Wednesday, March 18, 2020 11:27 AM
To: Carter Mecher;Brian Benson; Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara;Dr. Eva K Lee; Rob Darling, MD; Dr. Eva Lee; 1974usna@gmail.com;Caneva, Duane (DHS.GOV);eric.mcdonald@sdcounty.ca.gov;Richard Tubb; William Lang; Mecher, Carter

(VA.GOV);Tom Bossert; Richard Hatchett; Lawler, James V;Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov;CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana;Baric, Ralph S; WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH;Martin, Greg (state.gov);Walters, William (STATE.GOV);HAMILTON, CAMERON;Dodgen, Daniel (OS/ASPR/SPPR);DeBord, Kristin (OS/ASPR/SPPR);Phillips, Sally (OS/ASPR/SPPR);Matthew J CIV USARMY (USA);Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV);alexander.eastman@hq.dhs.gov;EVANS, MARIEFRED;jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov;KAUSHIK, SANGEETA;Lee, Scott (OS/ASPR/EMMO);Larry G; Ryan Morhard; Steven Jt(tCHFStDPH);Adams, Jerome (HHS/OASH);Mansoura, Monique K.; Fantinato, Jessica (USDA.GOV); DC; danny.shiau@usuhs.edu;Cordts, Jerome (CTR);Schnitzer, Jay J.; Ignacio, Joselito (FEMA.DHS.GOV); Will Gaskins; Kevin Montgomery;Logan, Linda L; LLogandakar; Venkayya, Rajeev;Ronny Jackson; Andy Desjardins, MD; Jerry Mothershead; Jim McLeod; Lauren Johnston;Lewis Hofmann
Subject: RE: Red Dawn Responding, Start 16 March

"Skate to where the

puck ~~is going~~ has already gone. “

Crisis care, crisis care, crisis care.

For a couple decades. many have recoiled against, been in denial of need, and said no to crisis standards of care.

So we’re left w/ clinicians being confronted w/ Sophie’s choice decisions - crisis care.

Hoping all (government by the people, for the people) can get behind clinicians making decisions on behalf of the greater good.

From: Carter Mecher

Sent: Tuesday, March 17, 2020 7:42 PM
To: Brian Benson <brian.benson@icloud.com>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee-

Rob Darling, MD <rdarling@patronusmedical.com>; Dr. Eva Lee <eva.evalee.lee64@gmail.com>;1974usna@gmail.com; Caneva, Duane (DHS.GOV) <duane.caneva@hq.dhs.gov>;eric.mcdonald@sdcounty.ca.gov; Richard Tubb <bg.richard.tubb@gmail.com>; William Lang <wlang@worldclinic.com>; Mecher, Carter (VA.GOV) <carter.mecher@va.gov>; Tom Bossert

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>; Venkayya, Rajeev <rajeev.venkayya@takeda.com>; Ronny Jackson <ronny.jacksonmd@gmail.com>; Andy Desjardins, MD <adesjardins@patronusmedical.com>; Jerry Mothershead <jmothershead@patronusmedical.com>; Jim McLeod <jmcleod@patronusmedical.com>; Lauren Johnston <ljohnston@patronusmedical.com>; Lewis Hofmann

Subject: RE: Red Dawn Responding, Start 16 March

March 17

Date of 1st Case	24-Jan		1-Feb		30-Jan		
Date of 1st Death	15-Feb		4-Mar		21-Feb		
	France (65M)		Spain (47M)		Italy (60M)		
	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cum Cases	Cum Deaths	Cu

20-Feb	12	1	2		3	0	
21-Feb	12	1	2		20	1	
22-Feb	12	1	2		63	2	
23-Feb	12	1	2		155	3	
24-Feb	12	1	3		229	7	
25-Feb	14	1	7		322	11	
26-Feb	18	2	13		453	12	
27-Feb	38	2	23		655	17	
28-Feb	57	2	32		889	21	
29-Feb	100	2	45		1,128	29	
1-Mar	130	2	84		1,694	34	
2-Mar	191	3	120		2,036	52	
3-Mar	212	4	151		2,502	79	
4-Mar	285	4	202		3,089	107	
5-Mar	423	7	248	1	3,858	148	
6-Mar	613	9	517	10	4,636	197	
7-Mar	949	16	613	17	5,833	233	
8-Mar	1,126	19	848	25	7,375	366	
9-Mar	1,412	30	1,231	30	9,172	463	
10-Mar	1,784	33	1,646	35	10,149	631	
11-Mar	2,281	49	2,277	55	12,462	827	
12-Mar	2,876	61	3,059	86	15,113	1,016	
13-Mar	3,661	79	4,209	120	17,660	1,266	
14-Mar	4,499	91	5,841	191	21,157	1,441	
15-Mar	5,423	127	7,753	288	24,747	1,809	
16-Mar	6,633	148	9,942	342	27,980	2,158	
17-Mar	7,730	175	11,316	510	31,506	2,503	

Sent from Mail for Windows 10

From: Brian Benson
Sent: Tuesday, March 17, 2020 3:10 PM
To: Hamel, Joseph (OS/ASPR/IO)
Cc: Tracey McNamara; Dr. Eva K Lee; Rob Darling, MD; Carter Mecher; Dr. Eva Lee; 1974usna@gmail.com; Caneva, Duane (DHS.GOV); eric.mcdonald@sdcounty.ca.gov; Richard Tubb; William Lang; Mecher, Carter (VA.GOV); Tom Bossert; Richard Hatchett; Lawler, James V; Parker Jr, Gerald W; Hanfling, Dan; david.gruber@dshs.texas.gov; CHRISTOPHER ALLEN; jamison.day@gmail.com; Borio, Luciana; Baric, Ralph S; Hunt, Richard (OS/ASPR/EMMO); WILKINSON, THOMAS; mvcallahan@mgh.harvard.edu; David; CharitytA@CDPH; Martin, Greg (state.gov); Walters, William (STATE.GOV); HAMILTON, CAMERON; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; Wolfe, Herbert (DHS.GOV); alexander.eastman@hq.dhs.gov; EVANS, MARIEFRED; jwleduc@utmb.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin (OS/ASPR/IO); Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Wade, David; david.a.tarantino@cbp.dhs.gov; KAUSHIK, SANGEETA; Lee, Scott (OS/ASPR/EMMO); Larry G; Ryan Morhard; Steven Jt(tCHFStDPH); Adams, Jerome

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Subject: Re: Red Dawn Responding, Start 16 March

Germano (Italian ICU doc) just updated me.....things still bad. He sent CT a week ago, with lung images being worse than clinical picture, in young patients. In my urgent care, Pt comes in and if concerns for COVID, I send to car for team to flu and RSV (that's what we've got POC). As an aside I was reading I think IL-2 and 4 higher early in viral infections and procalcitonin higher in bacterial....can we get the folks at i-STAT to get other inflammatory markers up ASAP and go door to door for other forms of testingPRN.

Anyway after flu and RSV negative, I bring in back door for Xchest v/s and exam. If all ok, send out with albuterol and Doxy (if chronic medical

conditions, 2/2 anti inflammatory properties and MRSA efficacy) and isolation instructions. I still don't have results from when I started testing for COVID last Thursday. Thoughts please?

See Germano article he sent below.

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On Mar 17, 2020, at 1:27 PM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov> wrote:

Or have the critical care staff to support the patient… That's currently being overlooked.

Strategic Innovation and Emerging Technology Manager
Assistant Secretary for Preparedness and Response
Office: ___________
Cell: ___________

From: Tracey McNamara <tmcNamara@westernu.edu>
Sent: Tuesday, March 17, 2020 1:41 PM
To: Dr. Eva K Lee <evalee- Rob Darling, MD <rdarling@patronusmedical.com>
Cc: Brian Benson <brian.benson@icloud.com>; Carter Mecher

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Subject: Re: Red Dawn Responding, Start 16 March

I would be careful with the number of ventilators. Numbers are one thing, wether they work, have been tested, is another thing altogether.
Tracey

Get Outlook for Android

<image006.jpg>
From: Rob Darling, MD <rdarling@patronusmedical.com>
Sent: Tuesday, March 17, 2020 10:21:53 AM
To: Dr. Eva K Lee <evalee-

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Subject: Re: Red Dawn Responding, Start 16 March

Adding a few colleagues.

Robert G. Darling, MD, FACEP, FFSEM
Founder, Chief Medical Officer
Patronus Medical
San Diego / Washington DC / Los Angeles

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Fax:
Mobile:

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e7e5a3a6fc182949&u=
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On Tue, Mar 17, 2020 at 12:55 PM Dr. Eva K Lee <evalee-

wrote:

> We must optimize strategically the federal resources,s because it is not about just on state, there are at least 3 big fire now, if not more. So every step we are going to take on resource allocation is going to be very critical. As mentioned NYP took out all medical students from their care team now. That could be an excellent reserve when they need them. Elective procedures are being canceled already so that care is more focused on covid-19 cases. We will

see more of these as it mushrooms out to multiple communities. And at some point, yes federal resources have to come in. Medical tents remain an important options for those big cluster locations. We need to optimize what is needed to set them up and who will mend the tents etc. I will talk to Stockpile today. We had a discussion last September and they had concerns at that time regarding not sufficient ventilators (750K at that time that they have). I want to calculate some of the few items to get a sense where we are now.

Carter, I have no doubt community transmission began ealier, and I won't wait for the first death, since CFR is only 3-14%, first death took us back at least 14 days priot, and earlier still there must be some non-death ones already.

evalee-

https://newton.isye.gatech.edu/DrLee/
mobile: 404-432-6835

Sent withProtonMailSecure Email.

------- Original Message -------
On Tuesday, March 17, 2020 12:42 PM, Brian Benson <brian.benson@icloud.com> wrote:

Group, is it wise to stop all Non-essential medical personnel from reporting to work. Including outpatient clinics urgent cares, etc. In Wuhan, as healthcare workers got sick, they mobilized providers from other regions. In the US, where is that other region? It may need to be from outpatient staff that can take the place of hospital folks as they get sick. Any thoughts?

On Mar 17, 2020, at 11:34 AM, Tracey McNamara <tmcNamara@westernu.edu> wrote:

When do we call in the cavalry? The governor of NY has asked for help from the Army Corps of Engineers. Why aren't other governors doing the same? What is the capacity of DoD to help in this crisis??? If ever therewas a time to bring all assets to the table, this is it.
Tracey

GetOutlook for Android

<image007.jpg>

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 7:03:58 AM
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Brian Benson
Dr. Eva K Lee <evalee-
g
Subject: Re: Red Dawn Responding, Start 16 March

Carter, this truly frightens me. one case is one too many,**I hope political leaders can act and act quickly.** TWe must do so or else we can't help these other cities that are escalated so rapidly. And globally, every country has to tighten, because we are running out of resources to do proper quarantine. We are already running out of healthcare resources, NYP has already canceled all elective procedures March 16. And many other hospitals who need care for covid-19 are facing the same issue. The medical tents appendices are needed and must be planned. I don't know what medical reserve we have and we have multiple fires burning simultaneously!

On Tue, Mar 17, 2020 at 9:53 AM Carter Mecher wrote:

Tom Bossert said on GMA this morning that like 1918, this will be a tale of many cities. What happens in the cities impacted the earliest in the US including Seattle, San Francisco, and NYC will likely be very different from what we see in other cities (just like 1918, timing of implementing TLC in individual cities in their individual epi curves will matter). The hardest message to convey to political leaders, public health leaders, and the public was the need to take

action before the storm arrived and when the sun was shining.

Interesting to look at the regional variation in Italy.

<CF6FCD97D27E435F8742CD1651A4B4C2.png>

It is looking just like what we observed in Hubei (including Wuhan) vs. Wuhan.

<107167135F80426AA971E5292779B4ED.png>

It will be important to look a little more closely inside the US—the aggregate numbers miss the real story. The storyline of the articles written about the variation in outcomes in US cities in 1918, is now unfolding and

writing itself in real time before our very eyes.

Sent from Mail for Windows 10

From: Dr. Eva Lee
Sent: Tuesday, March 17, 2020 9:09 AM
To: Carter Mecher
Cc: 1974usna@gmail.com;Caneva, Duane;McDonald, Eric;Richard Tubb;Rob Darling, MD;William Lang;Mecher, Carter;Tom Bossert;Richard Hatchett;Lawler, James V;Parker Jr, Gerald W;Hanfling, Dan;Gruber,David (DSHS);CHRISTOPHER ALLEN;jamison.day@gmail.com;Borio, Luciana;Tracey McNamara;Baric, Ralph S;Hunt, Richard (OS/ASPR/EMMO);WILKINSON, THOMAS;M.D.;David;CharitytA@CDPH;Gregory J;Walters, William (STATE.GOV);HAMILTON, CAMERON;Dodgen,tDanielt(OS/ASPR/SPPR);DeBord,Kristin (OS/ASPR/SPPR);Phillips, Sally (OS/ASPR/SPPR);Matthew J CIV USARMY (USA);Lisa Koonin;HARVEY, MELISSA;WOLFE, HERBERT;Eastman, Alexander;EVANS, MARIEFRED;jwleduc@utmb.edu;Johnson, Robert (OS/ASPR/BARDA);Yeskey, Kevin;Disbrow, Gary (OS/ASPR/BARDA);Redd, John (OS/ASPR/SPPR);Hassell, David (Chris) (OS/ASPR/IO);Hamel, Joseph (OS/ASPR/IO);Wade, David;TARANTINO, DAVID A;KAUSHIK, SANGEETA;Lee, Scott (OS/ASPR/EMMO);Larry G;Ryan Morhard;Steven Jt(tCHFStDPH);Adams, Jerome (HHS/OASH);Mansoura, Monique K.;Fantinato, Jessica (USDA.GOV);DC;danny.shiau@usuhs.edu;Cordts, Jerome (CTR);Schnitzer, Jay J.;Ignacio, Joselito;Will Gaskins;Kevin Montgomery;Logan, Linda L;LLogandakar;Venkayya, Rajeev;Ronny Jackson;Brian Benson;Dr. Eva K Lee
Subject: Re: Red Dawn Responding, Start 16 March

Containing covid-19 -- direct info from news -- See how Europe +US affecting the covid-19 counts - from 100 to 157 -
https://

www.reuters.com/article/us-health-coronavirus-hongkong-lam/hong-kong-to-quarantine-all-visitors-to-preserve-success-of-coronavirus-efforts-idUSKBN2140A4 "If we don't adopt some strict measures ... I'm afraid all precaution efforts done in the past two months would be wasted. It will affect the public health of Hong Kong." Four of the 157 confirmed coronavirus patients in Hong Kong have died. **Fifty of the latest 57 cases**were people with recent travel history,

Lam said. Hong Kong had previously designated three public housing blocs for quarantine, but those will be reserved for the high-risk cases. The lower-risk cases will be asked to stay under home quarantine or be placed under surveillance, which can include electronic wristbands with movement trackers, irregular landline phone calls and other means.

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Sent with ProtonMailS

ecure Email.

On Tue, Mar 17, 2020 at 8:28 AM Carter Mecher <cmecher@charter.net> wrote:

Worth the read. https://osf.io/fd4rh/?view_only=c2f00dfe3677493faa421fc2ea38e295

Sent from Mail for Windows 10

From: 1
Sent: Monday, March 16, 2020 11:58 PM
To: 'Caneva, Duane';'McDonald, Eric';'Carter Mecher';'Richard Tubb';'Rob Darling, MD';'William Lang';'Mecher, Carter';'Tom Bossert';'Richard Hatchett';'Lawler, James V';'Parker Jr, Gerald W';'Hanfling, Dan';'Gruber,David (DSHS)';'Dr. Eva Lee';'CHRISTOPHER ALLEN';jamison.day@gmail.com;'Borio, Luciana';'Tracey McNamara';'Baric, Ralph S';'Hunt, Richard (OS/ASPR/EMMO)';'WILKINSON, THOMAS';'M.D.';'David';'CharitytA@CDPH';'Gregory J';'Walters, William (STATE.GOV)';'HAMILTON, CAMERON';'Dodgen,tDanielt(OS/ASPR/SPPR)';'DeBord,Kristin (OS/ASPR/SPPR)';'Phillips, Sally (OS/ASPR/SPPR)';'Matthew J CIV USARMY (USA)';'Lisa Koonin';'HARVEY, MELISSA';'WOLFE, HERBERT';'Eastman, Alexander';'EVANS, MARIEFRED';jwleduc@utmb.edu;'Johnson, Robert (OS/ASPR/BARDA)';'Yeskey, Kevin';'Disbrow, Gary (OS/ASPR/BARDA)';'Redd, John (OS/ASPR/SPPR)';'Hassell, David (Chris) (OS/ASPR/IO)';'Hamel, Joseph (OS/ASPR/IO)';'Wade, David';'TARANTINO, DAVID A';'KAUSHIK, SANGEETA';'Lee, Scott (OS/ASPR/EMMO)';'Larry G';'Ryan Morhard';'Steven Jt(tCHFStDPH)';'Adams, Jerome (HHS/OASH)';'Mansoura, Monique K.';'Fantinato, Jessica (USDA.GOV)';'DC';danny.shiau@usuhs.edu;'Cordts, Jerome (CTR)';'Schnitzer, Jay J.';'Ignacio, Joselito';'Will Gaskins';'Kevin Montgomery';'Logan, Linda L';'LLogandakar';'Venkayya, Rajeev';'Ronny Jackson';'Brian Benson';'Dr. Eva K Lee'
Subject: RE: Red Dawn Responding, Start 16 March

Looks

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some
reason

From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Sent: Monday, March 16, 2020 10:54 PM
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Subject: Red Dawn Responding, Start 16 March

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